

Access DB# 153755**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 5/17/2005  
 Art Unit: 1774 Phone Number 2-1523 Serial Number: 10/729,724  
 Mail Box and Bldg/Room Location: Remsen 10C79 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Organic Element For Electroluminescent DevicesInventors (please provide full names): David Giesen, Richard Parton,  
Ching TangEarliest Priority Filing Date: 12/5/2003

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search the host compound described in claim 1 including specific formula (1) of claim 17

SCIENTIFIC REFERENCE BR  
Sci & Tech Inf. Ctr

MAY 18 2005

Pat. &amp; T.M. Office

(CLOSEST ART TOWARDS THE BEGINNING.)

## STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>EG</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr. Link _____
Date Completed: <u>5-20-05</u>	Litigation _____	Lexis/Nexis _____
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FILE 'LREGISTRY' ENTERED AT 15:27:16 ON 20 MAY 2005  
L1 STR

FILE 'REGISTRY' ENTERED AT 15:32:56 ON 20 MAY 2005  
L2 2 S L1  
L3 119 S L1 FUL  
SAV L3 GAR724/A

FILE 'HCA' ENTERED AT 15:35:05 ON 20 MAY 2005  
L4 72 S L3

FILE 'HCAPLUS' ENTERED AT 15:36:19 ON 20 MAY 2005  
L5 796 S GIESEN ?/AU  
L6 618 S PARTON ?/AU  
L7 45228 S TANG ?/AU  
L8 0 S L5 AND L6 AND L7  
L9 0 S L5 AND L6  
L10 2 S L5 AND L7  
L11 3 S L6 AND L7  
L12 5 S L10 OR L11  
SEL L12 1-5 RN

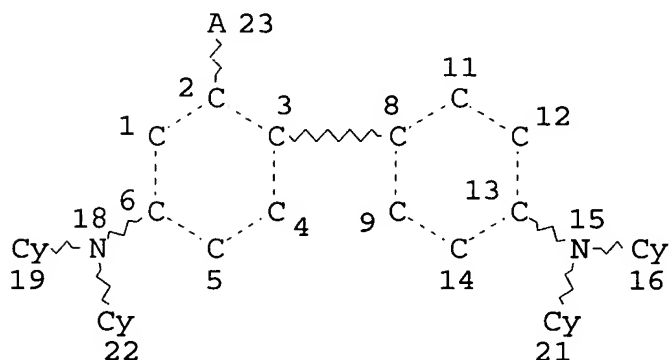
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L14 10 S L13 AND M/ELS  
E A/CI  
L15 1641106 S E8  
L16 52569 S L15 AND W/ELS  
L17 63671 S L15 AND MO/ELS  
L18 28245 S L15 AND IR/ELS  
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L20 23832 S L15 AND OS/ELS  
L21 88428 S L15 AND PT/ELS  
L22 69683 S L15 AND PD/ELS

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 L25 10168 S L18  
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 L27 7737 S L20  
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 L29 32720 S L22  
 L30 10 S L4 AND (L23-L29)  
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 L32 33 S L4 AND L31  
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 L37 21 S L34 AND (1900-2003/PY OR 1900-2003/PRY)  
 L38 38 S L35 AND (1900-2003/PY OR 1900-2003/PRY)

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L1 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 23  
 DEFAULT MLEVEL IS ATOM  
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
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STEREO ATTRIBUTES: NONE

L3 119 SEA FILE=REGISTRY SSS FUL L1

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119 ANSWERS

=> file hca

FILE 'HCA' ENTERED AT 17:19:52 ON 20 MAY 2005  
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=> d l36 1-10 cbib abs hitstr hitind

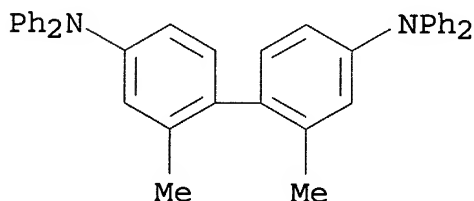
L36 ANSWER 1 OF 10 HCA COPYRIGHT 2005 ACS on STN  
142:103508 Organic **light emitting** device structure  
for obtaining chromaticity stability. Tung, Yeh-Jiun; Ngo, Tan  
(USA). U.S. Pat. Appl. Publ. US 2005006642 A1 20050113, 36 pp.,  
Cont.-in-part of U.S. Ser. No. 618,160. (English). CODEN: USXXCO.  
APPLICATION: US 2004-761980 20040120. PRIORITY: US 2003-618160  
20030710.

AB An org. **light emitting** device is described  
comprising an anode; an emissive region; and a cathode, wherein the  
emissive region comprises a first emissive layer, comprising a first  
host material and a first emissive material, and a second emissive  
layer in phys. contact with the first emissive layer and comprising  
a second host material and a second emissive material, and wherein:  
the first emissive layer is nearer to the anode than the second  
emissive layer, and at least one of the first emissive material or  
the second emissive material is a phosphorescent emissive material.

IT 80730-94-5  
(**light emitting** device contg.; org.  
**light emitting** device structures using  
phosphorescent phosphor for obtaining chromaticity stability)

RN 80730-94-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetraphenyl-  
(9CI) (CA INDEX NAME)



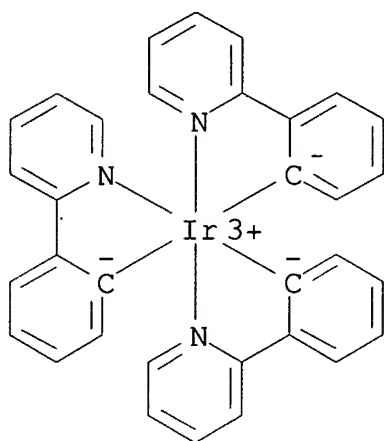


IT 94928-86-6 337526-95-1 359014-72-5  
 459133-59-6 512182-81-9 664374-04-3  
 665005-28-7

(phosphorescent material; org. **light emitting**  
 device structures using phosphorescent phosphor for obtaining  
 chromaticity stability)

RN 94928-86-6 HCA

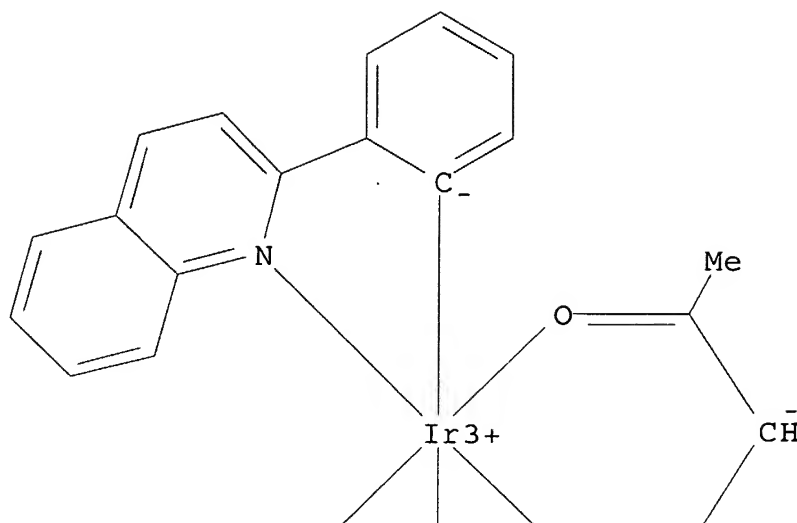
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)-  
 (9CI) (CA INDEX NAME)



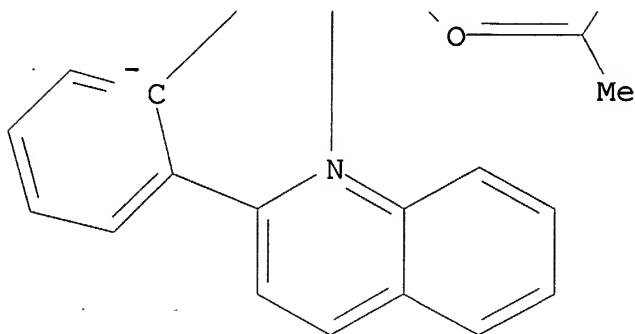
RN 337526-95-1 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-quinolinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)

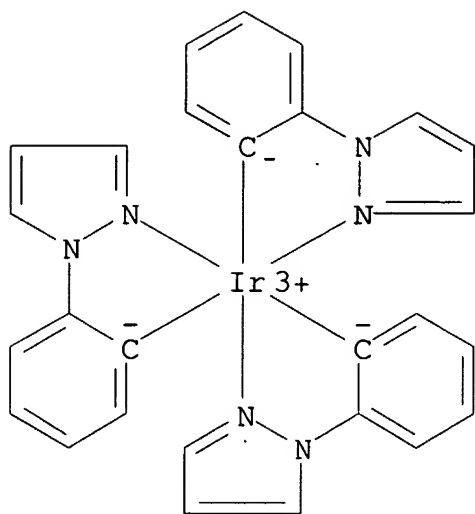
PAGE 1-A



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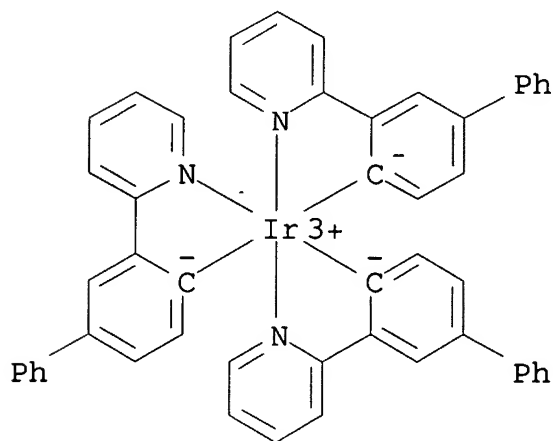


RN 359014-72-5 HCA  
CN Iridium, tris[2-(1H-pyrazol-1-yl-.kappa.N2)phenyl-.kappa.C] - (9Cl)  
(CA INDEX NAME)



RN 459133-59-6 HCA

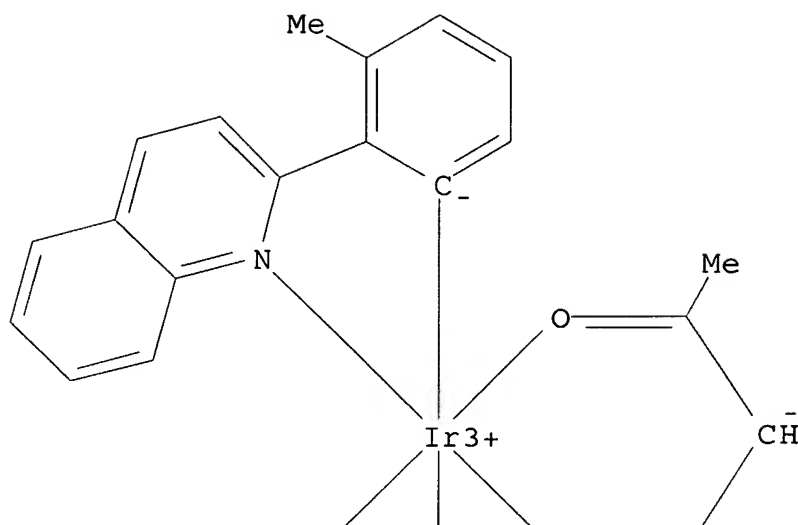
CN Iridium, tris[3-(2-pyridinyl-.kappa.N) [1,1'-biphenyl]-4-yl-.kappa.C] - (9CI) (CA INDEX NAME)



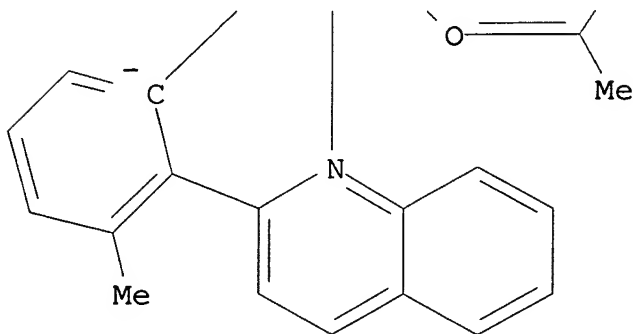
RN 512182-81-9 HCA

CN Iridium, bis[3-methyl-2-(2-quinolinyl-.kappa.N)phenyl-.kappa.C] (2,4-pentanedionato-.kappa.O,.kappa.O') - (9CI) (CA INDEX NAME)

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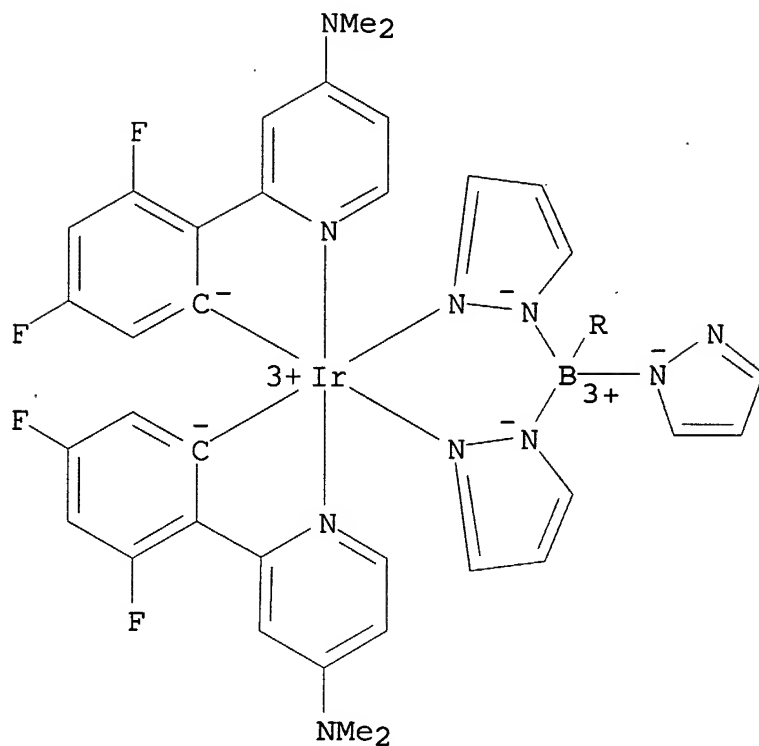


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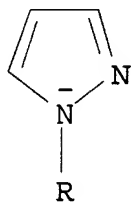


RN 664374-04-3 HCA  
 CN Iridium, bis[2-[4-(dimethylamino)-2-pyridinyl-.kappa.N]-3,5-difluorophenyl-.kappa.C][tetrakis(1H-pyrazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2']- (9CI) (CA INDEX NAME)

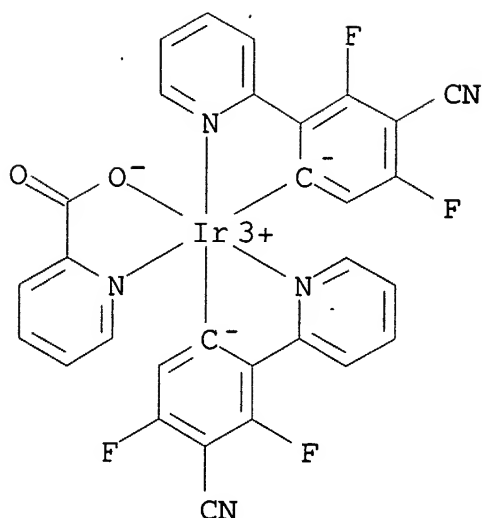
PAGE 1-A



PAGE 2-A



RN 665005-28-7 HCA  
 CN Iridium, bis[4-cyano-3,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.  
 .kappa.C] (2-pyridinecarboxylato-.kappa.N1, .kappa.O2) - (9CI) (CA  
 INDEX NAME)



- IC ICM H01L035-24  
 INCL 257040000  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 73, 76  
 IT **Electroluminescent** devices  
 (displays; org. **light emitting** device structures using phosphorescent phosphor for obtaining chromaticity stability)  
 IT **Luminescent** screens  
 (electroluminescent; org. **light emitting** device structures using phosphorescent phosphor for obtaining chromaticity stability)  
 IT Phosphorescence  
 Phosphors  
 (org. **light emitting** device structures using phosphorescent phosphor for obtaining chromaticity stability)  
 IT 147-14-8, Copper phthalocyanine. 1662-01-7, 4,7-Diphenyl-1,10-phenanthroline 2085-33-8, Alq3 19205-19-7, N,N'-Dimethylquinacridone 29261-33-4, Tetrafluoro-tetracyanoquinodimethane 50851-57-5 50926-11-9, Indium tin oxide 51325-91-8, DCM 58328-31-7, CBP **80730-94-5** 123847-85-8, NPD 124729-98-2 126213-51-2, Poly(3,4-ethylenedioxythiophene) 146162-54-1 150405-69-9, TAZ 192198-85-9, TPBi 550378-78-4  
 (light emitting device contg.; org. **light emitting** device structures using phosphorescent phosphor for obtaining chromaticity stability)  
 IT **94928-86-6 337526-95-1 359014-72-5 459133-59-6 512182-81-9 664374-04-3**

665005-28-7

(phosphorescent material; org. **light emitting** device structures using phosphorescent phosphor for obtaining chromaticity stability)

L36 ANSWER 2 OF 10 HCA COPYRIGHT 2005 ACS on STN

141:322678 Organic **electroluminescent** element, illuminator, and display. Suzuri, Yoshiyuki; Kita, Hiroshi; Oshiyama, Tomohiro; Fukuda, Mitsuhiro; Ueda, Noriko (Japan). U.S. Pat. Appl. Publ. US 2004189190 A1 20040930, 63 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-804788 20040319. PRIORITY: JP 2003-85023 20030326.

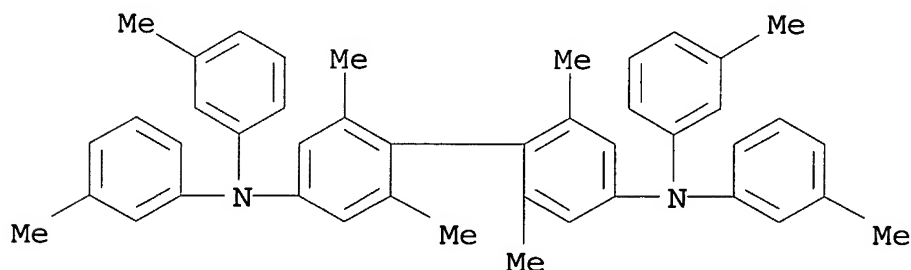
AB Disclosed are an org. **electroluminescent** element comprising a **light emission** layer contg. a phosphorescent compd. and a hole transporting layer adjacent thereto contg. a hole transporting material, wherein the hole transporting material has a 0-0 band of the phosphorescence spectra of from 300 to 450 nm and has a mol. wt. of not less than 550, and an illuminator and a display each comprising the org. **electroluminescent** element.

IT 612519-55-8 693794-98-8 765943-89-3

(org. **electroluminescent** element contg. phosphorescent compd. and hole-transporting compd.)

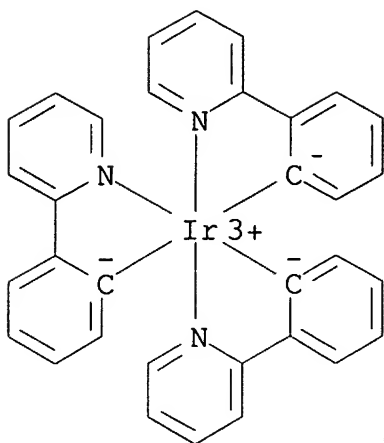
RN 612519-55-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 693794-98-8 HCA

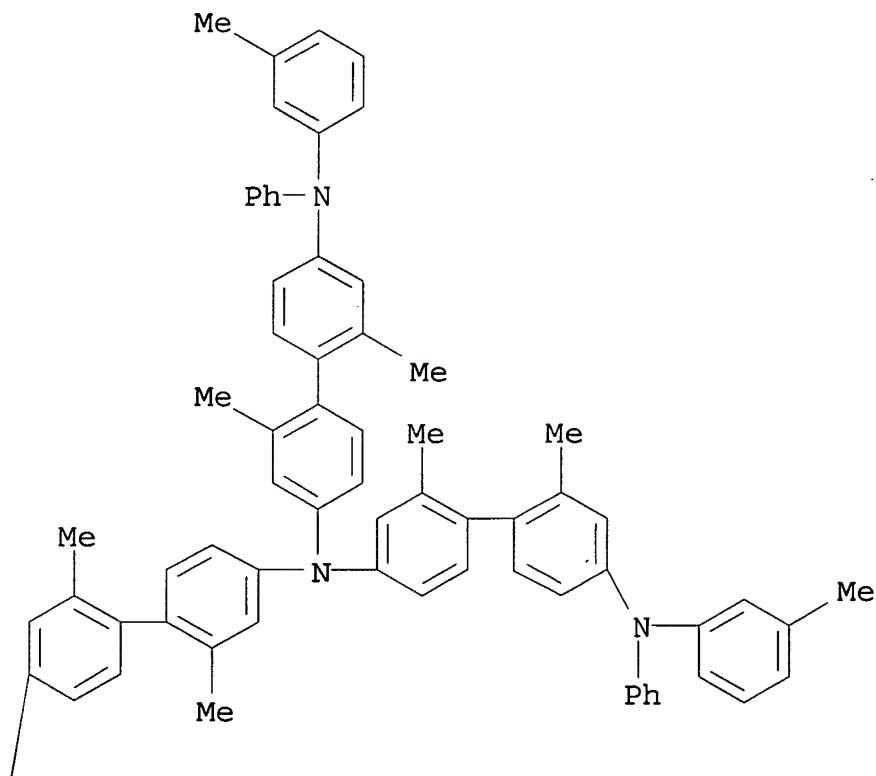
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C] - (9CI) (CA INDEX NAME)



RN 765943-89-3 HCA

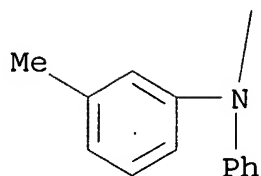
CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[2,2'-dimethyl-4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-2,2'-dimethyl-N'-(3-methylphenyl)-N'-phenyl- (9CI) (CA INDEX NAME)

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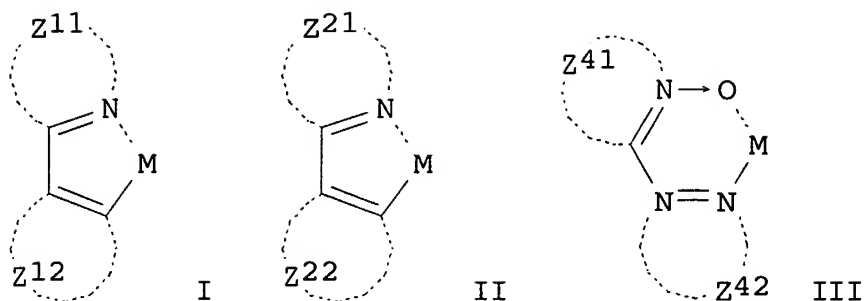


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IC ICM H05B033-14  
ICS F21V009-16  
INCL 313504000  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
ST org **electroluminescent** display phosphorescent compd hole transporting material  
IT **Electroluminescent** devices  
(displays; org. **electroluminescent** element contg. phosphorescent compd. and hole-transporting compd.)  
IT **Luminescent** screens  
(**electroluminescent**; org. **electroluminescent** element contg. phosphorescent compd. and hole-transporting compd.)  
IT 2085-33-8, Alq3 4733-39-5 58328-31-7 58473-78-2 61526-94-1  
123847-85-8 149685-52-9 178331-01-6 263722-47-0 405171-87-1  
**612519-55-8 693794-98-8 765943-77-9**  
765943-79-1 765943-81-5 765943-83-7 765943-85-9 765943-87-1  
**765943-89-3 765943-90-6**  
(org. **electroluminescent** element contg. phosphorescent compd. and hole-transporting compd.)  
L36 ANSWER 3 OF 10 HCA COPYRIGHT 2005 ACS on STN  
141:268179 Long-life white-emitting organic **electroluminescent** devices, displays, illumination apparatus, and electric appliances therewith. Fukuda, Mitsuhiro; Genda, Kazuo (Konica Minolta Holdings, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2004253298 A2 20040909, 577 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-43860 20030221.

GI



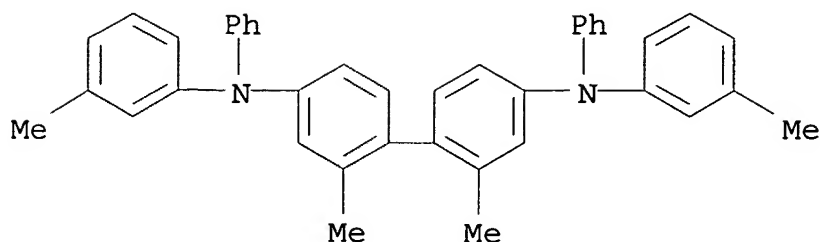
AB The devices have, in their constituent layers (e.g., emitting layers, hole- or electron-transporting layers), (i) compds. represented by  $X_1R_1C:CR_2X_2$  [ $X_1, X_2$  = aryl, heterocycle;  $R_1, R_2$  = aryl, heterocyclic hydrocarbyl, cycloalkoxy ( $R_1 = R_2$  = aryl)],  $R_{11}R_{12}R_{13}R_{14}R_{15}P$  ( $R_{11}-R_{15}$  = monovalent substituent),  $Ar_2Ar_1C_6H_4(m-Ar_1Ar_2)$  [ $Ar_1$  = bivalent arom. hydrocarbylene;  $Ar_2$  = (substituted) Ph; H atom on the benzene ring may be substituted with (cyclo)alkyl, alkoxy, or halo],  $Z(ArQ)_n$  [ $Q$  = (substituted) o-(2-pyridyl)phenyl;  $Z$  = n-valent bridging group, single bond;  $Ar$  = bivalent arylene;  $n$  = 2-8], etc., (ii) fluorescent compds. with mol. wt. 500-2000 and at. ratio  $F/(F + H)$  0-0.9 and having fluorescent peak at  $\lambda_{\text{to req.}} 415$  nm, (iii) polysilanes  $(R_{21}R_{22}Si)_n$  [ $R_{21}, R_{22}$  = alkyl(oxy), arom. group, aryloxy;  $n \geq 3$ ] or  $[R_{31}(Ar_{31}NR_{32}R_{33})Si]_n$  [ $R_{31}$  = alkyl(oxy), arom. group, aryloxy;  $R_{32}, R_{33}$  = alkyl, arom. group;  $Ar_{31}$  = arylene;  $n \geq 3$ ], and/or (iv) fluorescent compds. satisfying at. ratio  $N/C$  0-0.05. The devices, having phosphorescent dopants I ( $Z_{11}$  = arom. azacycle;  $Z_{12}$  = nonarom. ring, 5-membered arom. ring, azulene;  $M$  = metal), II ( $Z_{21}, Z_{22}$  = arom. azacycle;  $M$  = metal), or III ( $Z_{41}$  = azacycle;  $Z_{42}$  = ring;  $M$  = metal) in emitting layers, are also claimed. The devices exhibit high luminescent efficiency and substantially white emission, and are suited for light source uses, esp. of LCD.

IT 65181-79-5 453590-51-7 478262-76-9  
478262-77-0 478370-42-2 606142-46-5  
606142-48-7 606142-49-8 606142-50-1  
606142-51-2 606142-52-3 606142-55-6  
606142-58-9 606142-59-0 606142-60-3  
606142-61-4 655236-05-8 655236-07-0  
655236-12-7

(long-life white-emitting org. LED contg. azacyclic phosphorescent dopants and showing high luminescent efficiency)

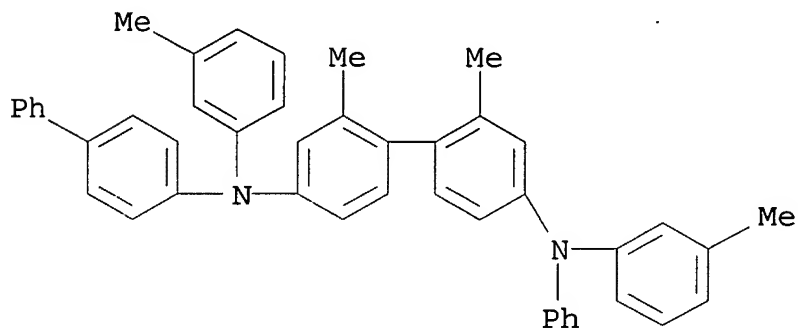
RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



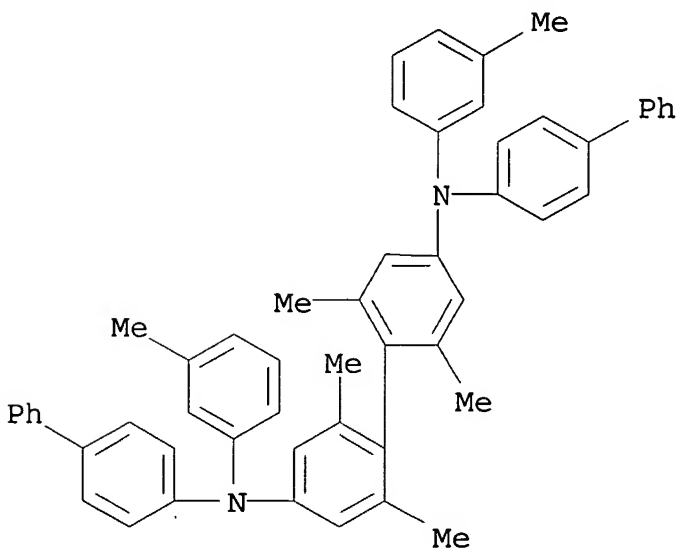
RN 453590-51-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N-[1,1'-biphenyl]-4-yl-2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N'-phenyl- (9CI) (CA INDEX NAME)



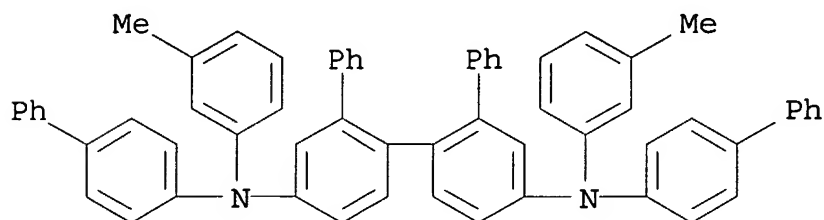
RN 478262-76-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-2,2',6,6'-tetramethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



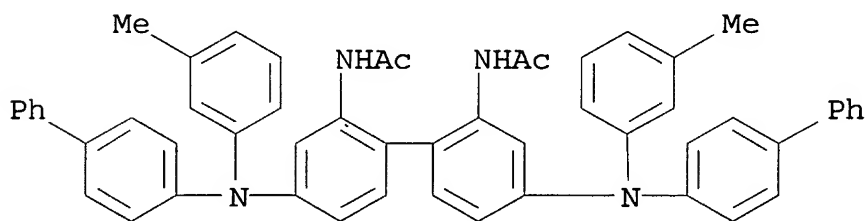
RN 478262-77-0 HCA

CN [1,1':2',1'':2'',1'''-Quaterphenyl]-4'',5'-diamine,  
N,N'-bis([1,1'-biphenyl]-4-yl)-N,N'-bis(3-methylphenyl)- (9CI) (CA  
INDEX NAME)



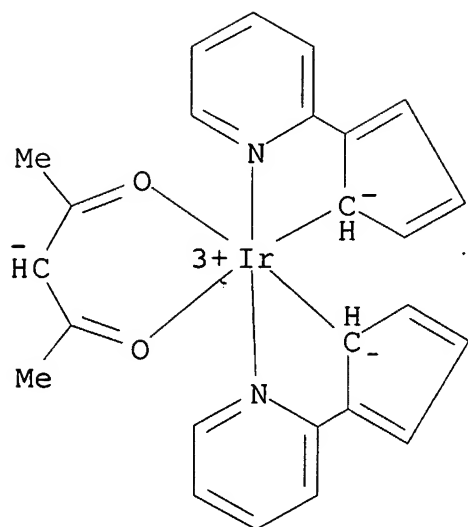
RN 478370-42-2 HCA

CN Acetamide, N,N'-[4,4'-bis[[1,1'-biphenyl]-4-yl(3-methylphenyl)amino][1,1'-biphenyl]-2,2'-diyl]bis- (9CI) (CA INDEX  
NAME)



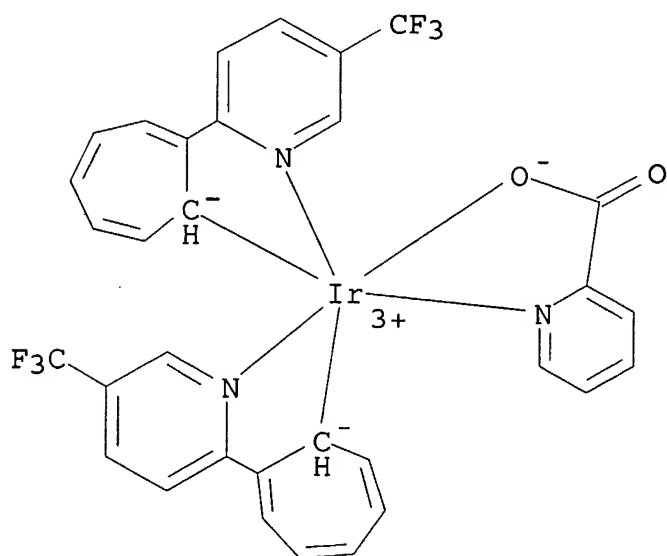
RN 606142-46-5 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-2,4-cyclopentadien-1-yl-.kappa.C]- (9CI) (CA INDEX NAME)



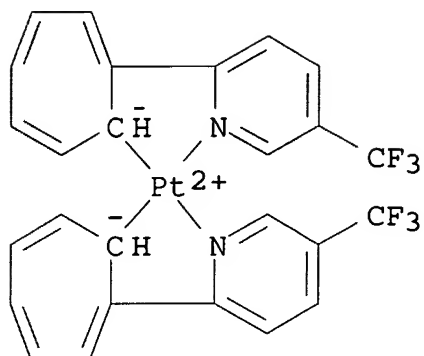
RN 606142-48-7 HCA

CN Iridium, (2-pyridinecarboxylato-.kappa.N1,.kappa.O2)bis[2-[5-(trifluoromethyl)-2-pyridinyl-.kappa.N]-2,4,6-cycloheptatrien-1-yl-.kappa.C]- (9CI) (CA INDEX NAME)



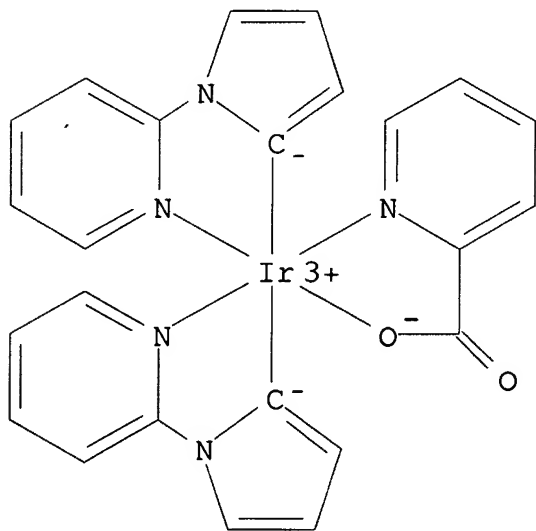
RN 606142-49-8 HCA

CN Platinum, bis[2-[5-(trifluoromethyl)-2-pyridinyl-.kappa.N]-2,4,6-cycloheptatrien-1-yl-.kappa.C]- (9CI) (CA INDEX NAME)



RN 606142-50-1 HCA

CN Iridium, (2-pyridinecarboxylato-.kappa.N1,.kappa.O2)bis[1-(2-pyridinyl-.kappa.N)-1H-pyrrol-2-yl-.kappa.C] - (9CI) (CA INDEX NAME)



RN 606142-51-2 HCA

CN Iridium, bis[1-(2-benzothiazolyl-.kappa.N3)-1H-pyrrol-2-yl-.kappa.C] (2,4-pentanedionato-.kappa.O,.kappa.O') - (9CI) (CA INDEX NAME)

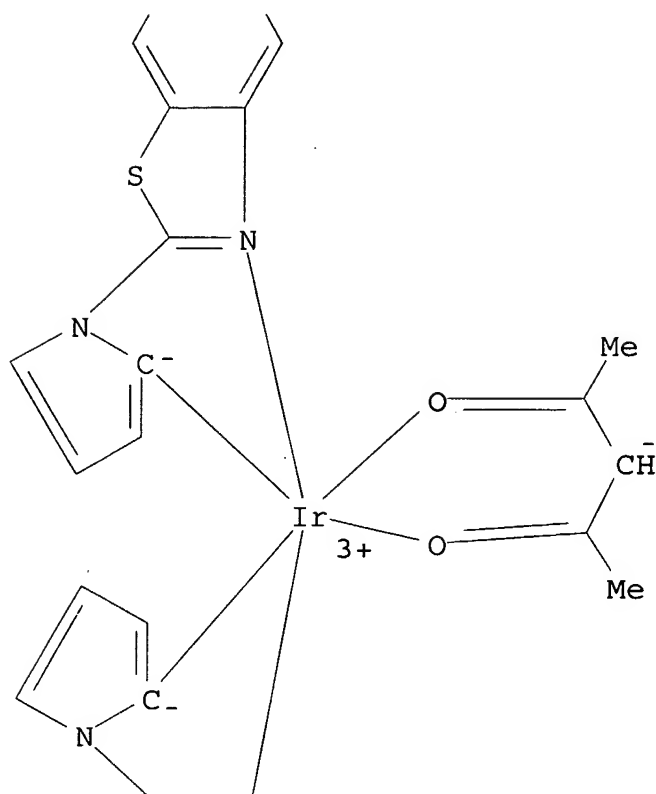
GARRETT 10/729,724

Page 18

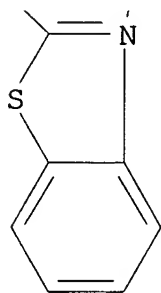
PAGE 1-A



PAGE 2-A

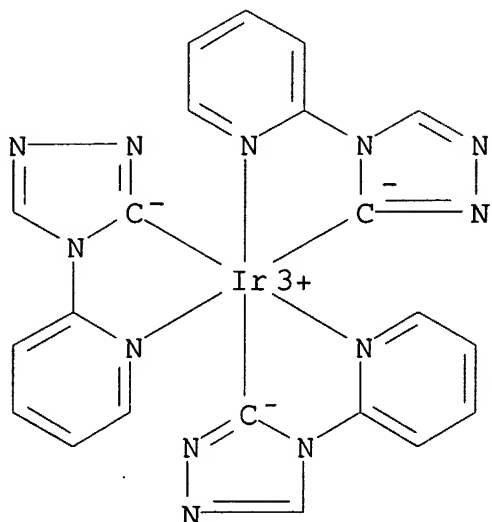


PAGE 3-A



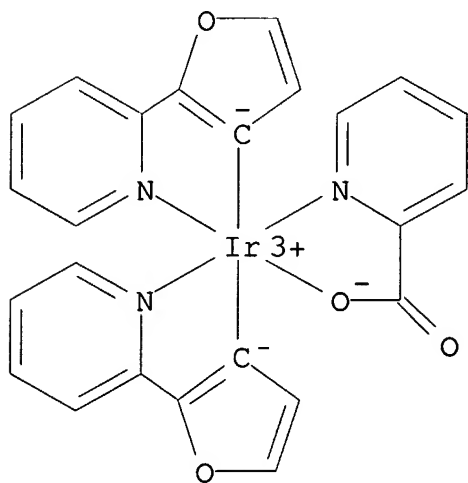
RN 606142-52-3 HCA  
CN Iridium, tris[4-(2-pyridinyl-κN)-4H-1,2,4-triazol-3-yl-κC] - (9CI) (CA INDEX NAME)





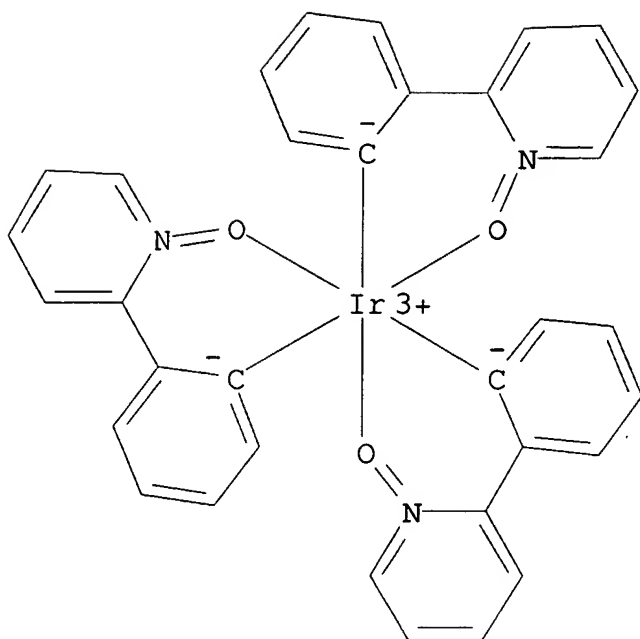
RN 606142-55-6 HCA

CN Iridium, (2-pyridinecarboxylato-.kappa.N1,.kappa.O2)bis[2-(2-pyridinyl-.kappa.N)-3-furanyl-.kappa.C] - (9CI) (CA INDEX NAME)



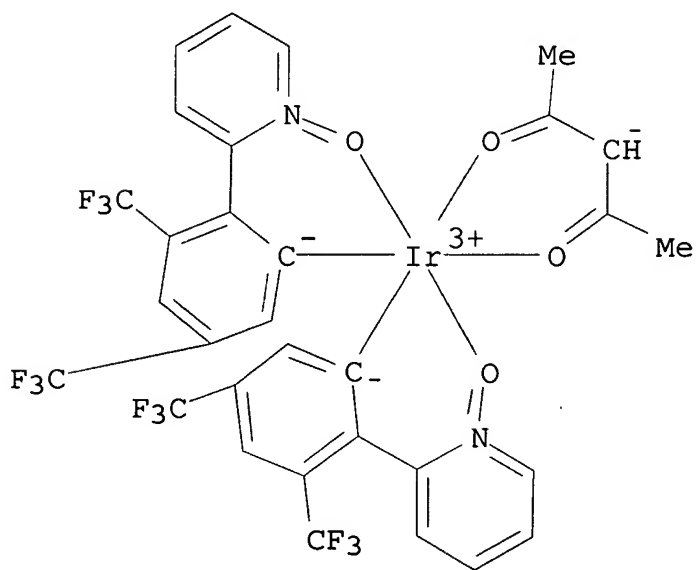
RN 606142-58-9 HCA

CN Iridium, tris[2-[1-(oxido-.kappa.O)-2-pyridinyl]phenyl-.kappa.C] - (9CI) (CA INDEX NAME)



RN 606142-59-0 HCA

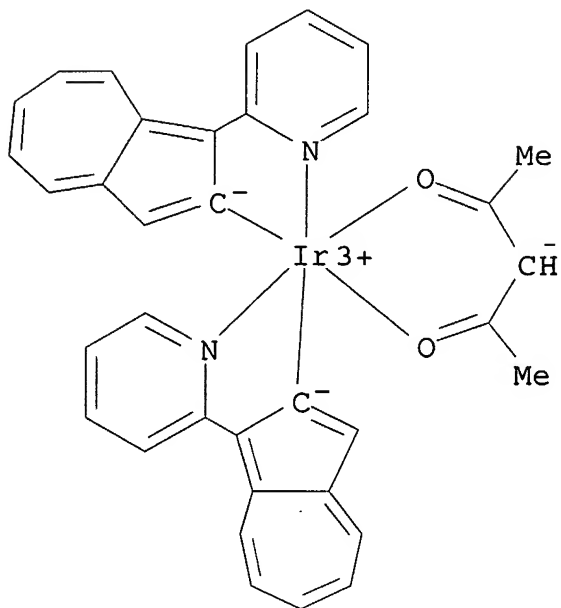
CN Iridium, bis[2-[1-(oxido- $\kappa$ O)-2-pyridinyl]-3,5-bis(trifluoromethyl)phenyl- $\kappa$ C](2,4-pentanedionato- $\kappa$ O, $\kappa$ O')- (9CI) (CA INDEX NAME)



RN 606142-60-3 HCA

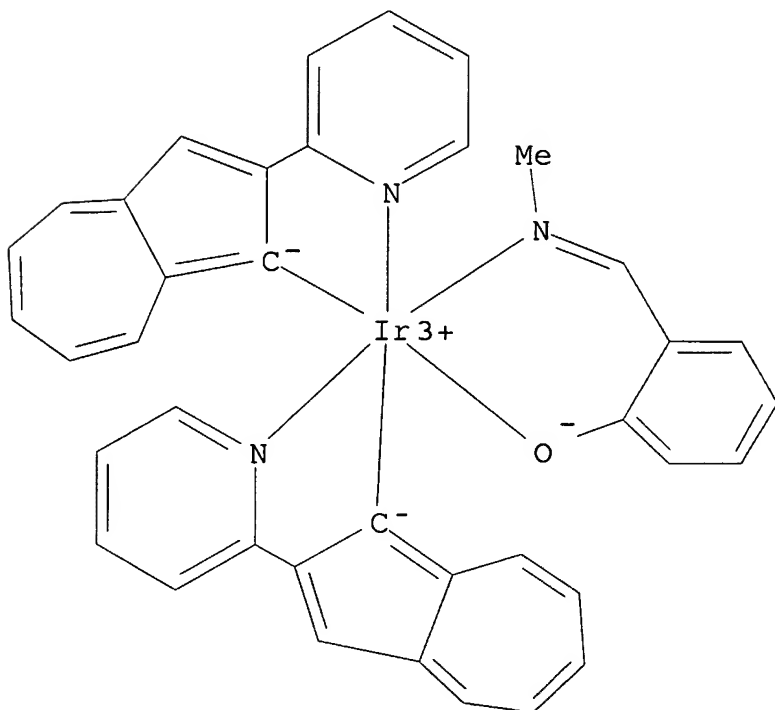
CN Iridium, (2,4-pentanedionato- $\kappa$ O, $\kappa$ O')bis[1-(2-pyridinyl-

.kappa.N)-2-azulenyl-.kappa.C] - (9CI) (CA INDEX NAME)



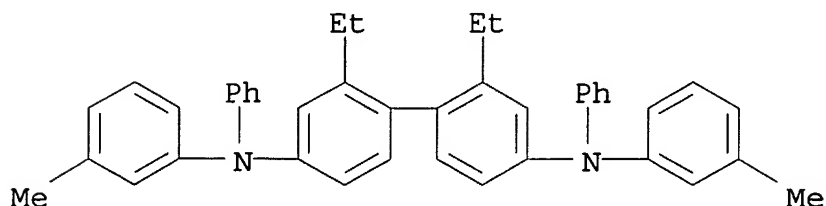
RN 606142-61-4 HCA

CN Iridium, [2-[(methylimino-.kappa.N)methyl]phenolato-.kappa.O]bis[2-(2-pyridinyl-.kappa.N)-1-azulenyl-.kappa.C] - (9CI) (CA INDEX NAME)



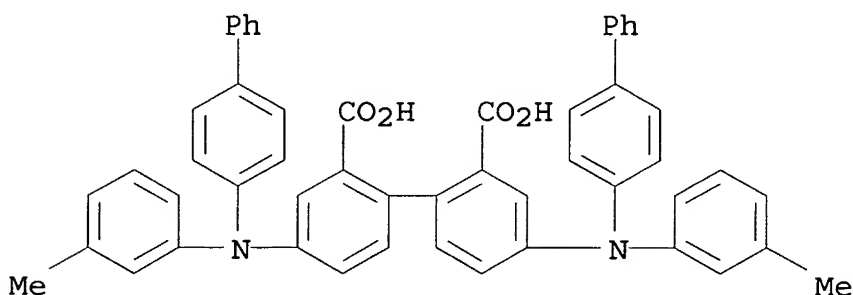
RN 655236-05-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-diethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



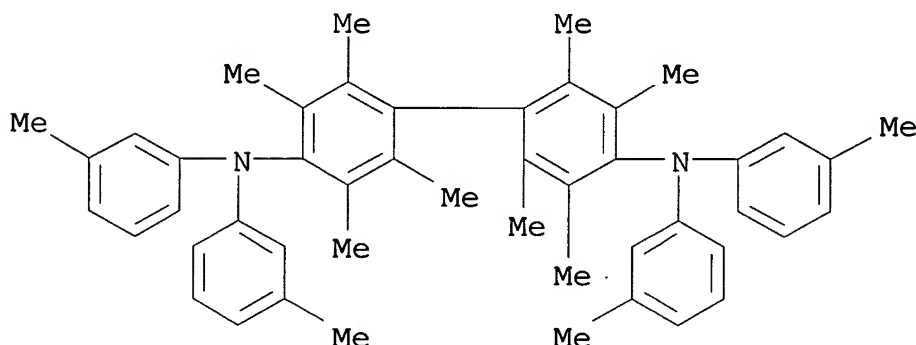
RN 655236-07-0 HCA

CN [1,1'-Biphenyl]-2,2'-dicarboxylic acid, 4,4'-bis[[1,1'-biphenyl]-4-yl(3-methylphenyl)amino]- (9CI) (CA INDEX NAME)



RN 655236-12-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',5,5',6,6'-octamethyl-N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; G02F001-1335; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 28, 29, 38, 74

ST white emitting **electroluminescent** life luminescent efficiency; phosphorescent azacyclic dopant **luminescent** efficiency **org** LED; LCD **light** source white **emitting** electrophosphorescent

IT Luminescent substances  
(**electroluminescent**, electrophosphorescent, host-guest; long-life white-emitting **org. LED** contg. azacyclic phosphorescent dopants and showing high luminescent efficiency)

IT Phosphorescent substances  
(electrophosphorescent; long-life white-emitting **org. LED** contg. azacyclic phosphorescent dopants and showing high luminescent efficiency)

IT Fluorescent substances  
(fluorine- or nitrogen-contg.; long-life white-emitting **org. LED** contg. azacyclic phosphorescent dopants and showing high luminescent efficiency)

IT Liquid crystal displays  
(light sources for; long-life white-emitting **org. LED** contg. azacyclic phosphorescent dopants and showing high luminescent efficiency)

IT Electric apparatus  
(long-life white-emitting **org. LED** contg. azacyclic phosphorescent dopants and showing high luminescent efficiency)

IT Organometallic compounds  
Polysilanes  
(long-life white-emitting **org. LED** contg. azacyclic phosphorescent dopants and showing high luminescent efficiency)

IT **Electroluminescent** devices  
(white-emitting, electrophosphorescent; long-life white-emitting **org. LED** contg. azacyclic phosphorescent dopants and showing high luminescent efficiency)

IT 71-43-2, Benzene, uses 159-68-2, 9,9'-Spirobi[9H-9-silafluorene]  
346-02-1 752-28-3 1423-70-7 17742-49-3 18822-13-4  
20156-53-0 32314-41-3 33861-11-9 35088-77-8 38186-32-2  
54765-15-0 **65181-79-5** 122107-04-4 133942-93-5  
139376-06-0 142289-08-5 203070-80-8 213621-16-0 219917-71-2  
288581-17-9 300823-56-7 300823-57-8 301300-11-8 332350-53-5  
405171-49-5 405171-87-1 405172-39-6 **453590-51-7**  
478262-73-6 478262-74-7 **478262-76-9 478262-77-0**  
478262-78-1 478262-79-2 **478370-42-2** 492446-94-3  
492446-97-6 497097-34-4 497097-36-6 511270-11-4 522630-08-6  
522630-12-2 522630-19-9 522630-30-4 522630-34-8 522630-36-0  
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567625-73-4 567625-75-6 567625-78-9 567625-80-3 569674-85-7  
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 606142-49-8 606142-50-1 606142-51-2  
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 620630-67-3 640773-62-2 640773-65-5 640773-68-8 643029-54-3  
 643029-58-7 643029-59-8 643029-60-1 643029-61-2 643029-63-4  
 643753-82-6 643758-09-2 643758-10-5 643758-15-0 644973-61-5  
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 655236-05-8 655236-07-0 655236-12-7  
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 754231-80-6 754231-82-8 754231-83-9 754231-84-0 754231-87-3  
 754231-88-4 754231-89-5 754231-90-8 754231-91-9 754231-92-0  
 754231-94-2

(long-life white-emitting org. LED contg. azacyclic  
 phosphorescent dopants and showing high luminescent efficiency)

IT 5660-43-5P 51445-93-3P 115533-27-2P 174291-37-3P  
 288297-90-5P 344564-96-1P 522630-06-4P 522630-07-5P  
 557787-52-7P 567625-71-2P 567625-76-7P 567625-77-8P  
 569674-88-0P 569674-97-1P 643753-84-8P 669072-95-1P  
 676553-36-9P 705941-83-9P 754231-93-1P 754231-95-3P  
 754232-01-4P 754980-36-4P

(long-life white-emitting org. LED contg. azacyclic  
 phosphorescent dopants and showing high luminescent efficiency)

IT 604-53-5P, 1,1'-Binaphthalene 5122-94-1P 16761-23-2P  
 19264-73-4P 33170-68-2P 49610-33-5P 50668-21-8P,  
 3-Iodo-9-ethylcarbazole 77547-84-3P 85137-69-5P 103989-84-0P  
 121073-89-0P 146232-42-0P 155886-75-2P 155886-83-2P  
 263164-82-5P 288297-93-8P 288297-94-9P 288297-95-0P  
 357437-74-2P 363607-69-6P 522630-41-7P 522630-42-8P  
 567625-82-5P 567625-83-6P 643753-87-1P 643753-91-7P  
 754232-02-5P

(long-life white-emitting org. LED contg. azacyclic  
 phosphorescent dopants and showing high luminescent efficiency)

IT 62-53-3, Aniline, reactions 67-64-1, Acetone, reactions 76-86-8, Triphenylchlorosilane 86-74-8, Carbazole 90-11-9, 1-Bromonaphthalene 90-90-4, 4-Bromobenzophenone 92-66-0, 4-Bromobiphenyl 95-54-5, 1,2-Phenylenediamine, reactions 98-80-6, Phenylboronic acid 99-97-8, N,N-Dimethyl-p-tolylamine 100-20-9, Terephthaloyl dichloride 106-37-6, 1,4-Dibromobenzene 106-38-7, 4-Bromotoluene 108-36-1, 1,3-Dibromobenzene 108-94-1, Cyclohexanone, reactions 108-98-5, Thiophenol, reactions 110-13-4, 2,5-Hexanedione 119-61-9, Benzophenone, reactions 119-93-7 121-43-7, Trimethoxyborane 132-32-1, 3-Amino-9-ethylcarbazole 302-01-2, Hydrazine, reactions 495-71-6, 1,2-Dibenzoylthane 523-27-3, 9,10-Dibromoanthracene 583-53-9, 1,2-Dibromobenzene 619-42-1, Methyl 4-bromobenzoate 623-27-8, 1,4-Diformylbenzene 624-92-0, Dimethyl disulfide 626-19-7, 1,3-Benzenedicarboxaldehyde 762-04-9, Diethyl phosphite 826-81-3, 2-Methyl-8-quinolinol 885-39-2 931-50-0, Cyclohexylmagnesium bromide 1003-09-4, 2-Bromothiophene 1074-24-4, 2,5-Dibromo-p-xylene 1592-95-6, 3-BromoCarbazole 1730-04-7, 1,8-Diiodonaphthalene 1733-63-7 2586-62-1, 1-Bromo-2-methylnaphthalene 2592-73-6, 1,1-Dibromo-2,2-diphenylethylene 4546-04-7 6999-03-7, 1-Bromo-4-trimethylsilylbenzene 10489-97-1, 1,1-Dibromocyclohexane 38218-24-5, Indium isopropoxide 51044-13-4, 4-Bromobenzyltriphenylphosphonium bromide 65810-18-6, 1,3,5-Cycloheptatriene-1-carboxaldehyde 95902-10-6, 3-Bromobenzyltriphenylphosphonium bromide 643753-90-6 754232-00-3

(long-life white-emitting org. **LED** contg. azacyclic phosphorescent dopants and showing high luminescent efficiency)

L36 ANSWER 4 OF 10 HCA COPYRIGHT 2005 ACS on STN

141:96344 Organic **electroluminescent** device for displays and illumination source and its production method. Kita, Hiroshi; Yamada, Taketoshi; Suzurizato, Yoshiyuki; Ueda, Noriko (Konica Minolta Holdings Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2004185967 A2 20040702, 65 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-351157 20021203.

AB The invention relates to an org. **electroluminescent** device comprising a **light-emitting** layer contg. a phosphorescent dopant and a multifunctioning polymer, wherein, at least, the two of functional mol. units selected from a luminescent host unit, a hole transporting unit, and an electron transporting unit constitute the multifunctioning polymer.

IT 714976-08-6 714976-11-1 714976-18-8  
714976-29-1 714976-31-5

(org. **electroluminescent** device having phosphorescent dopant and multifunctioning polymer in **light emitting** layer)

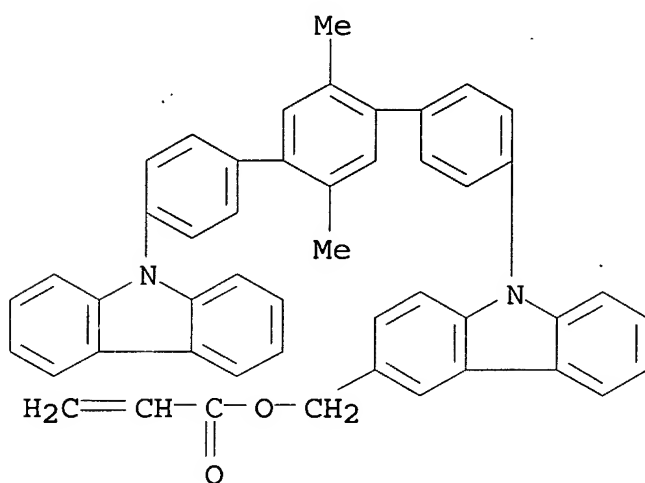
RN 714976-08-6 HCA

CN 2-Propenoic acid, [9-[4''-(9H-carbazol-9-yl)-2',5'-dimethyl[1,1':4',1''-terphenyl]-4-yl]-9H-carbazol-3-yl]methyl ester, polymer with [4-[[4'-(diphenylamino)-2,2'-dimethyl[1,1'-biphenyl]-4-yl]phenylamino]phenyl]methyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 714976-07-5

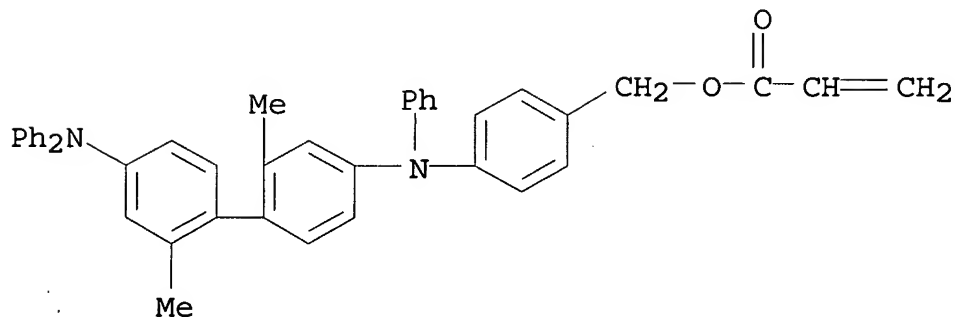
CMF C48 H36 N2 O2



CM 2

CRN 714976-06-4

CMF C42 H36 N2 O2



RN 714976-11-1 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N-(4-oxiranylphenyl)-N'-phenyl-, polymer with 9-[4'-(9H-carbazol-9-yl)-2,2'-dimethyl[1,1'-biphenyl]-4-yl]-3-oxiranyl-9H-carbazole (9CI)

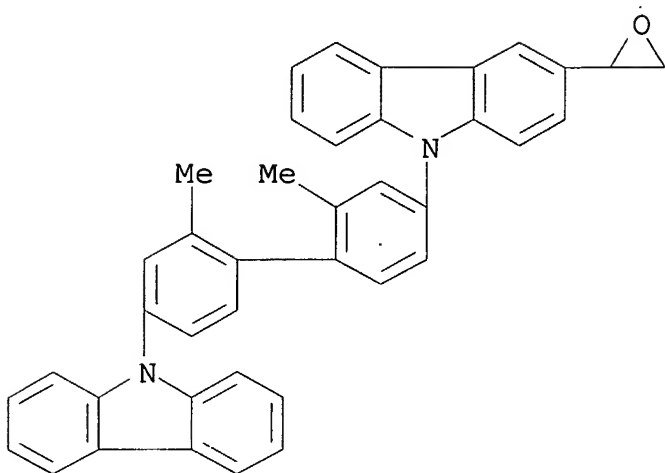


(CA INDEX NAME)

CM 1

CRN 714976-10-0

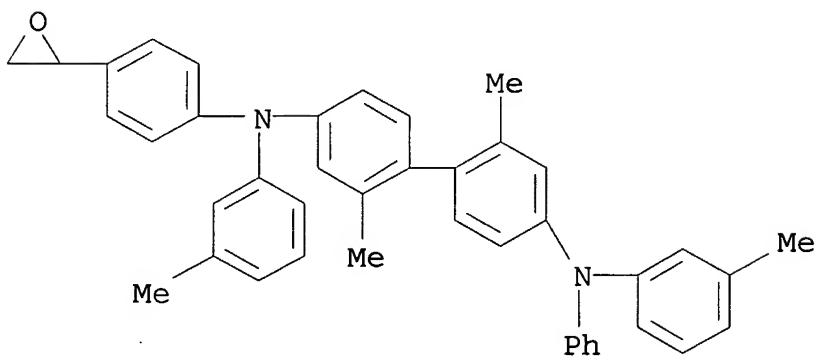
CMF C40 H30 N2 O



CM 2

CRN 714976-09-7

CMF C42 H38 N2 O



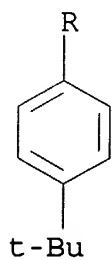
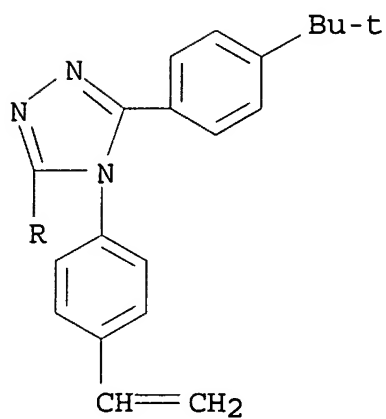
RN 714976-18-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-di-1-naphthalenyl-N,N'-diphenyl-, polymer with 3,5-bis[4-(1,1-dimethylethyl)phenyl]-4-(4-ethenylphenyl)-4H-1,2,4-triazole and 9-(4-ethenylphenyl)-9H-carbazole (9CI) (CA INDEX NAME)

CM 1

CRN 714976-17-7

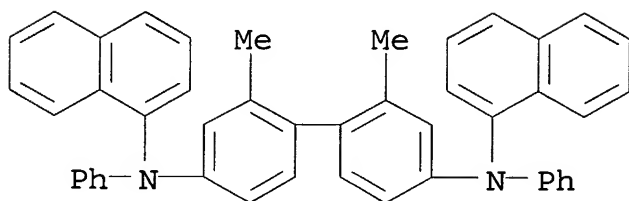
CMF C30 H33 N3



CM 2

CRN 495416-60-9

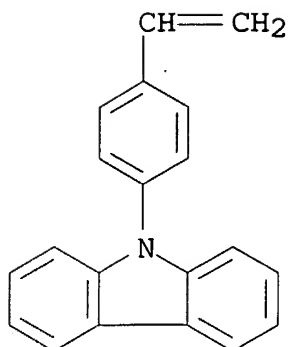
CMF C46 H36 N2



CM 3

CRN 52913-19-6

CMF C20 H15 N



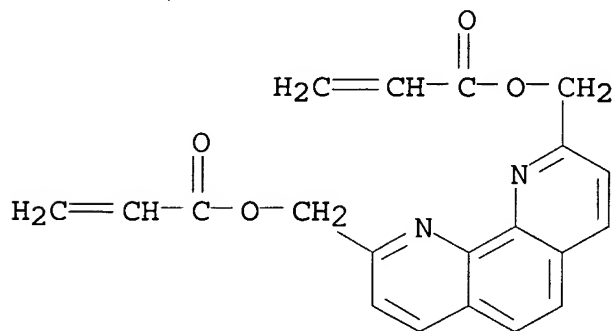
RN 714976-29-1 HCA

CN 2-Propenoic acid, 1,10-phenanthroline-2,9-diylbis(methylene) ester, polymer with [9-[4''-(9H-carbazol-9-yl)-2',5'-dimethyl[1,1':4',1''-terphenyl]-4-yl]-9H-carbazol-3-yl]methyl 2-propenoate and [4-[[4'-(diphenylamino)-2,2'-dimethyl[1,1'-biphenyl]-4-yl]phenylamino]phenyl]methyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 714976-28-0

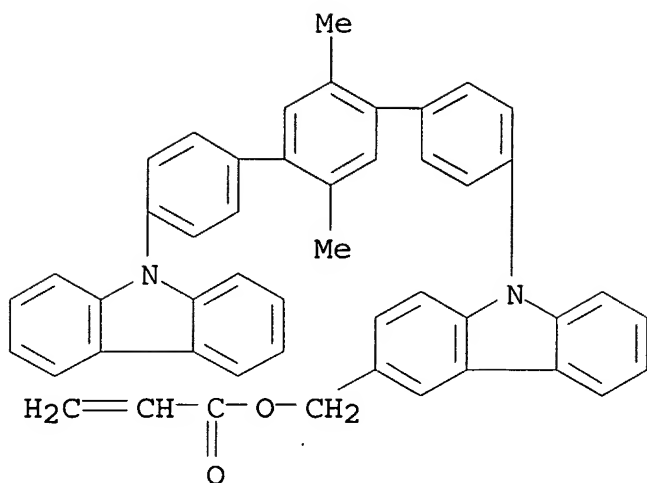
CMF C20 H16 N2 O4



CM 2

CRN 714976-07-5

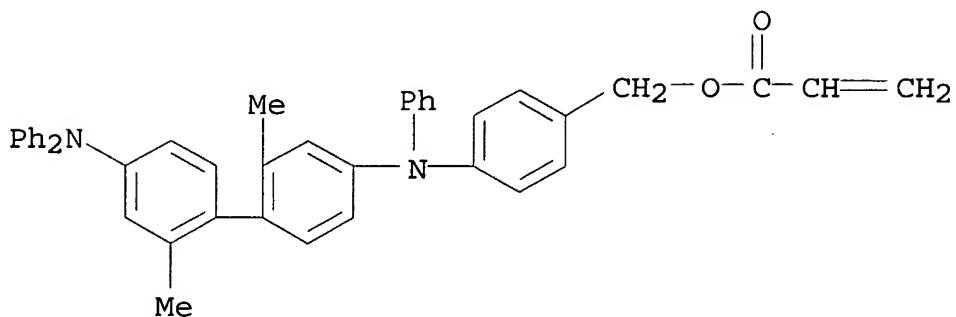
CMF C48 H36 N2 O2



CM 3

CRN 714976-06-4

CMF C42 H36 N2 O2



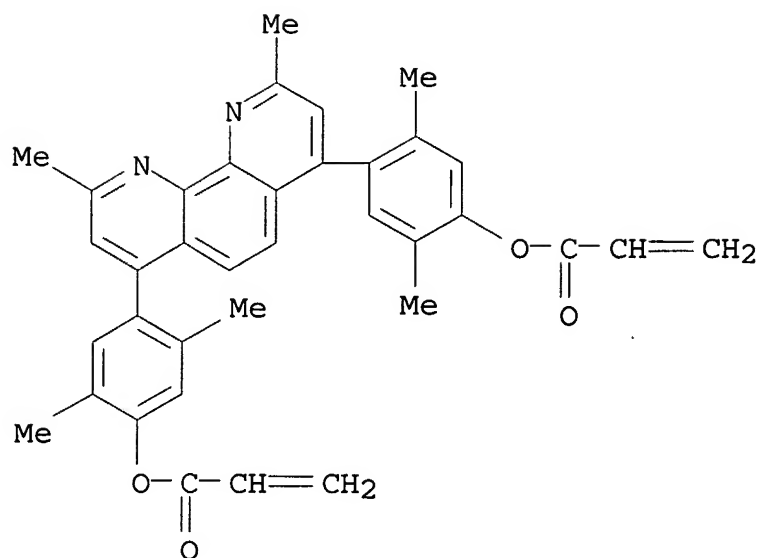
RN 714976-31-5 HCA

CN 2-Propenoic acid, (2,9-dimethyl-1,10-phenanthroline-4,7-diyl)bis(2,5-dimethyl-4,1-phenylene) ester, polymer with [9-[4''-(9H-carbazol-9-yl)-2',5'-dimethyl[1,1':4',1''-terphenyl]-4-yl]-9H-carbazol-3-yl]methyl 2-propenoate and [4-[[4'-(diphenylamino)-2,2'-dimethyl[1,1'-biphenyl]-4-yl]phenylamino]phenyl]methyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 714976-30-4

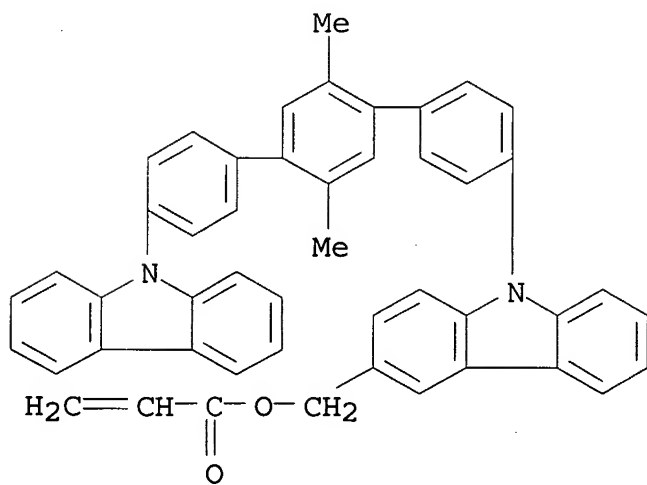
CMF C36 H32 N2 O4



CM 2

CRN 714976-07-5

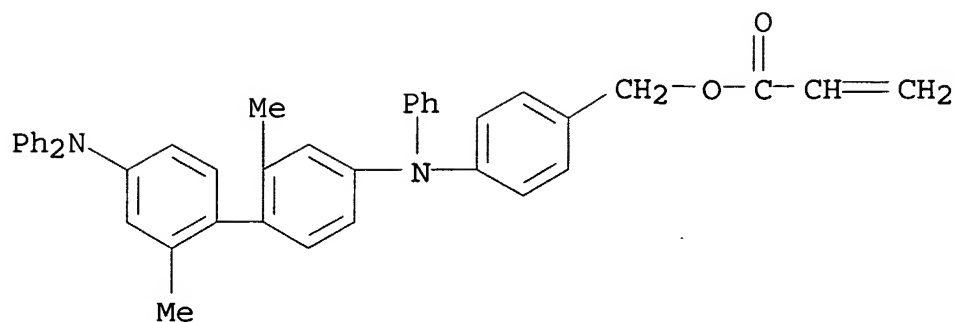
CMF C48 H36 N2 O2



CM 3

CRN 714976-06-4

CMF C42 H36 N2 O2

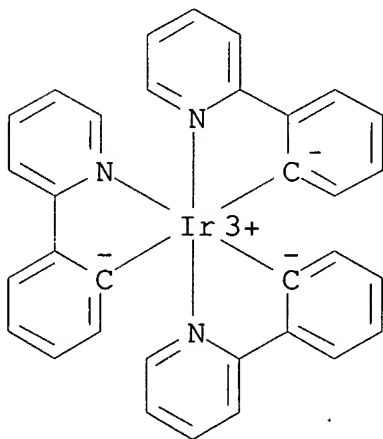


IT 94928-86-6 344796-22-1 376367-93-0

(org. electroluminescent device having phosphorescent dopant and multifunctioning polymer in light emitting layer)

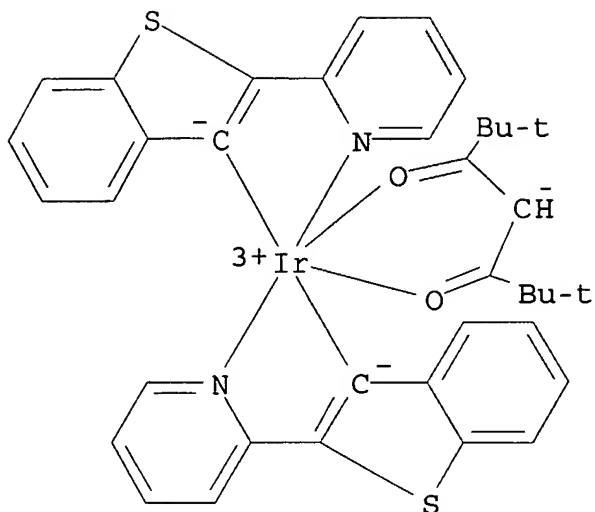
RN 94928-86-6 HCA

CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22) - (9CI) (CA INDEX NAME)



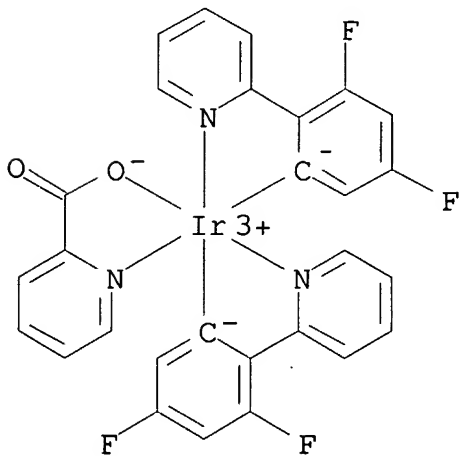
RN 344796-22-1 HCA

CN Iridium, bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C] (2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O') - , (OC-6-33) - (9CI) (CA INDEX NAME)



RN 376367-93-0 HCA

CN Iridium, bis[3,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C] (2-pyridinecarboxylato-.kappa.N1,.kappa.O2)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C08F212-00; C08F220-34; C08F226-12; C08F293-00; C08G081-00;  
C08G085-00; C09K011-06; H05B033-10

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 37, 74

ST org **electroluminescent** device phosphoresce multifunction polymer

IT **Electroluminescent** devices  
Light sources

Optical imaging devices

Phosphorescent substances

(org. **electroluminescent** device having phosphorescent  
dopant and multifunctioning polymer in **light**  
**emitting** layer)

IT Polyesters, uses

Polyethers, uses

Polyurethanes, uses

(org. **electroluminescent** device having phosphorescent  
dopant and multifunctioning polymer in **light**  
**emitting** layer)

IT 714976-00-8 714976-02-0 714976-05-3 **714976-08-6**

**714976-11-1** 714976-13-3 714976-16-6 **714976-18-8**

714976-21-3 714976-25-7 714976-27-9 **714976-29-1**

**714976-31-5** 714976-33-7 714976-35-9 714976-36-0

714976-38-2

(org. **electroluminescent** device having phosphorescent  
dopant and multifunctioning polymer in **light**  
**emitting** layer)

IT **94928-86-6 344796-22-1 376367-93-0**

(org. **electroluminescent** device having phosphorescent  
dopant and multifunctioning polymer in **light**  
**emitting** layer)

L36 ANSWER 5 OF 10 HCA COPYRIGHT 2005 ACS on STN

140:383225 Organic **electroluminescent** elements with high  
emission efficiency and displays having them. Oshiyama, Tomohiro;  
Yamada, Taketoshi; Kita, Hiroshi (Konica Minolta Holdings Inc.,  
Japan). Jpn. Kokai Tokkyo Koho JP 2004139819 A2 20040513, 28 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-302865 20021017.

AB The element, useful for blue-emitting LEDs, comprises (A) an anode,  
(B) a layer contg. 1st hole transporters (e.g. arylamines), (C) a  
layer contg. 2nd hole transporters, and (D) a luminescent layer  
contg. host compds. and phosphorescent dopants, wherein the min.  
triplet excitation energy of the 1st hole transporters (T1a), the  
2nd hole transporters (T1b), the host compds. (T1c), and the dopants  
(T1d) satisfy the relationships of  $T1b > T1c$ ,  $T1a < T1c$ , and  $T1c >$   
 $T1d$ . The max. luminescence wavelength may be 380 to 500 nm.  
Ionization potentials of the hole transporters, the dopants, and the  
host compds. are also specified.

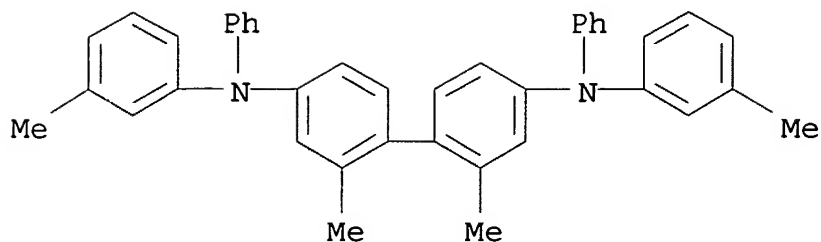
IT **65181-79-5 612519-55-8**

(hole transporter; org. **EL** elements with high emission  
efficiency for displays)

RN 65181-79-5 HCA

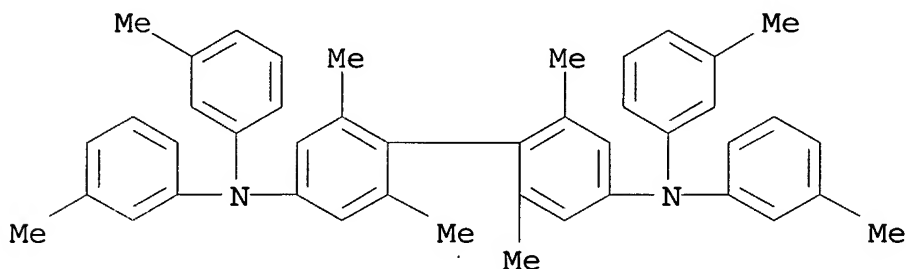
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-  
N,N'-diphenyl- (9CI) (CA INDEX NAME)





RN 612519-55-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)

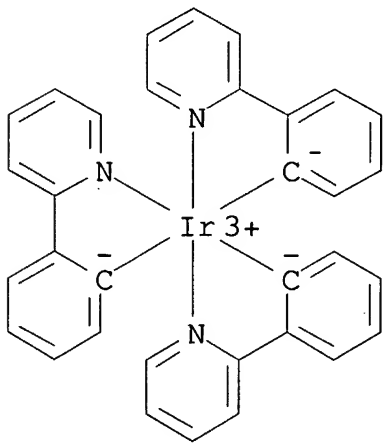


IT 94928-86-6 343978-79-0 500295-32-9

(phosphorescent dopant; org. **EL** elements with high emission efficiency for displays)

RN 94928-86-6 HCA

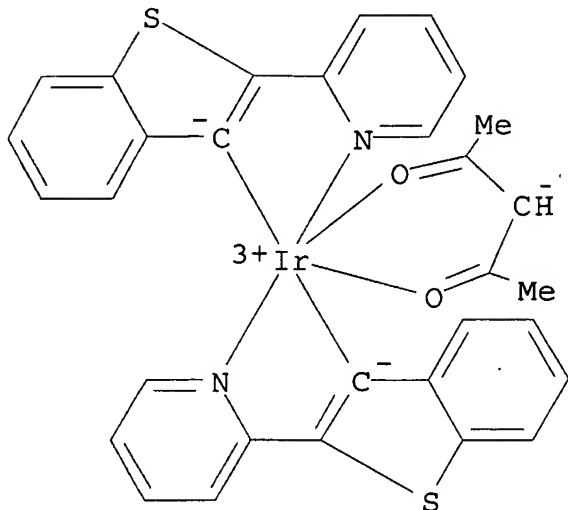
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)



RN 343978-79-0 HCA

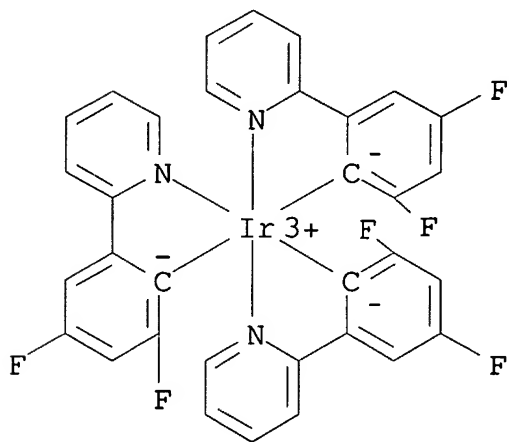
CN Iridium, (2,4-pentanedionato-.kappa.O, .kappa.O')bis[2-(2-pyridinyl-

.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 500295-32-9 HCA

CN Iridium, tris[2,4-difluoro-6-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS H05B033-22; C09K011-06

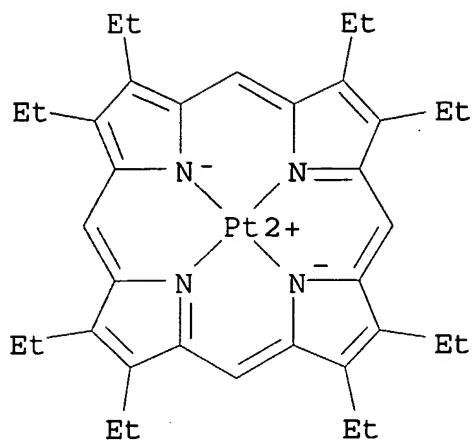
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST org **electroluminescent** device blue emitting display;  
triplet excitation energy phosphor org LED

IT Amines, uses

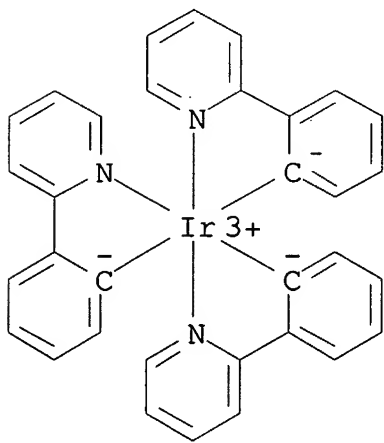
(arom., hole transporter; org. **EL** elements with high emission efficiency for displays)

- IT **Electroluminescent** devices  
(displays; org. **EL** elements with high emission efficiency for displays)
- IT **Luminescent** screens  
(**electroluminescent**; org. **EL** elements with high emission efficiency for displays)
- IT **Electroluminescent** devices  
(org. **EL** elements with high emission efficiency for displays)
- IT 147-14-8 65181-79-5 123847-85-8 155090-83-8, PEDOT-PSS 405171-87-1 612519-55-8  
(hole transporter; org. **EL** elements with high emission efficiency for displays)
- IT 58328-31-7 604785-54-8  
(host compd.; org. **EL** elements with high emission efficiency for displays)
- IT 94928-86-6 343978-79-0 500295-32-9  
(phosphorescent dopant; org. **EL** elements with high emission efficiency for displays)
- L36 ANSWER 6 OF 10 HCA COPYRIGHT 2005 ACS on STN
- 140:172301 Organic **electroluminescent** elements with improved brightness and durability and color displays using them. Ueda, Noriko; Yamada, Taketoshi; Kita, Hiroshi (Konica Minolta Holdings Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2004047443 A2 20040212, 57 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-134267 20030513. PRIORITY: JP 2002-140103 20020515.
- AB The elements contain , R1R2R3N [R1-3 = substituted p-A-Ph; A = (un)substituted arom. hydrocarb], preferably in hole-transport layers. The elements may have **light-emitting** layers contg. phosphorescent complexes of Group VIII metals (Os, Ir, or Pt, preferably) and .gtoreq.1 fluorescent compds. having max. fluorescence wavelength longer than max. emission wavelength of the complexes.
- IT 31248-39-2 94928-86-6 337526-85-9  
337526-98-4 343978-78-9 343978-79-0  
370878-74-3 376367-95-2 474948-19-1  
500295-32-9 562043-95-2  
(dopant, **light-emitting** layer; org. **EL** elements contg. triphenylamine-based compds. with improved brightness and durability for displays)
- RN 31248-39-2 HCA
- CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



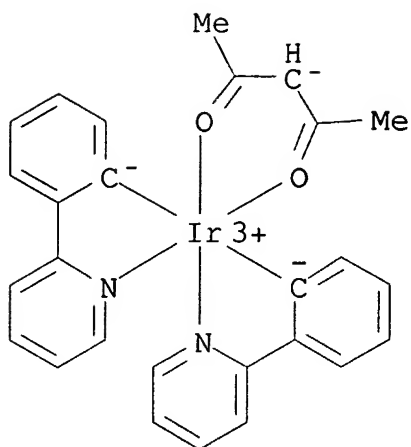
RN 94928-86-6 HCA

CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22) - (9CI) (CA INDEX NAME)



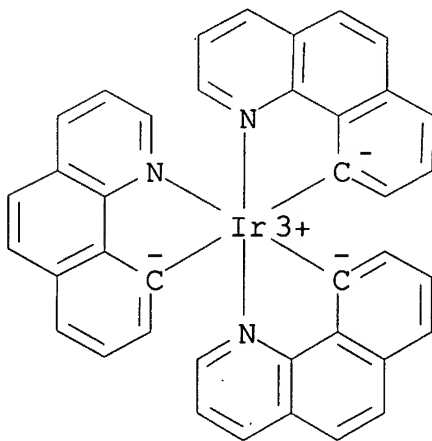
RN 337526-85-9 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33) - (9CI) (CA INDEX NAME)



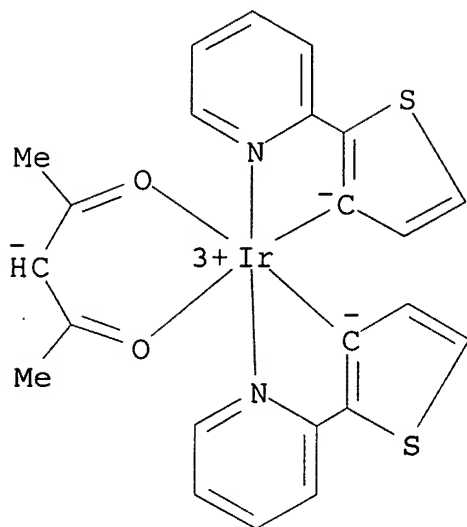
RN 337526-98-4 HCA

CN Iridium, tris(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)-, (OC-6-22)-(9CI) (CA INDEX NAME)



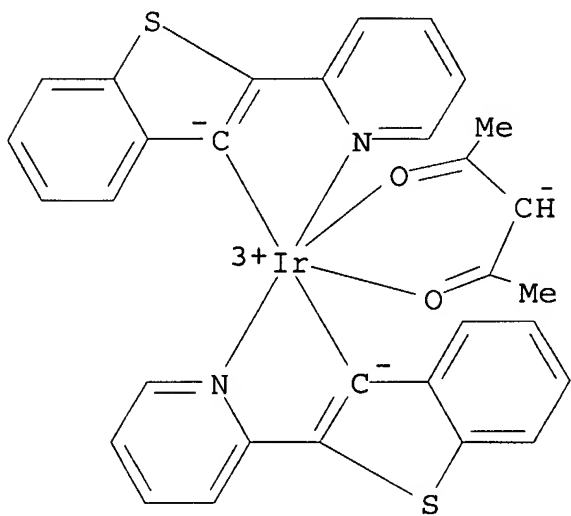
RN 343978-78-9 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-33)-(9CI) (CA INDEX NAME)



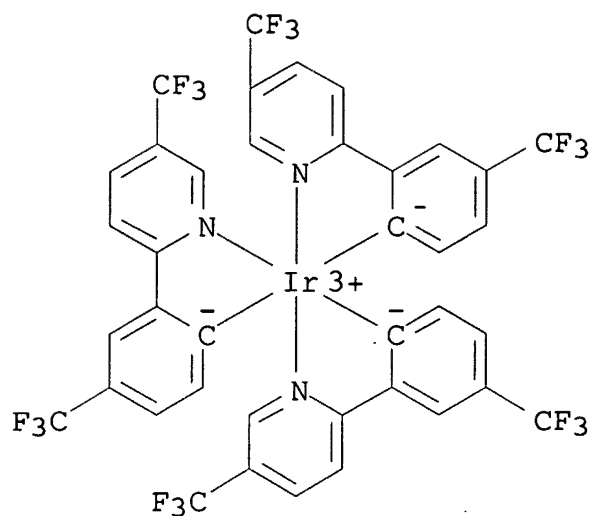
RN 343978-79-0 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



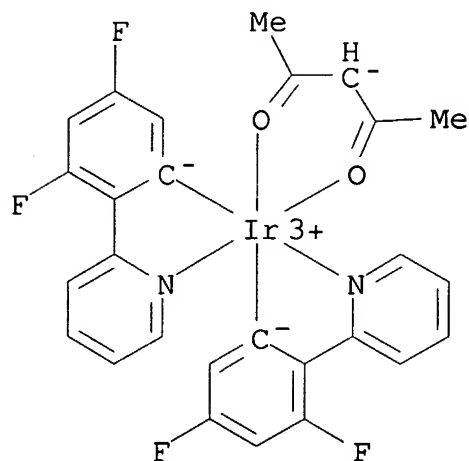
RN 370878-74-3 HCA

CN Iridium, tris[4-(trifluoromethyl)-2-[5-(trifluoromethyl)-2-pyridinyl-.kappa.N]phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)



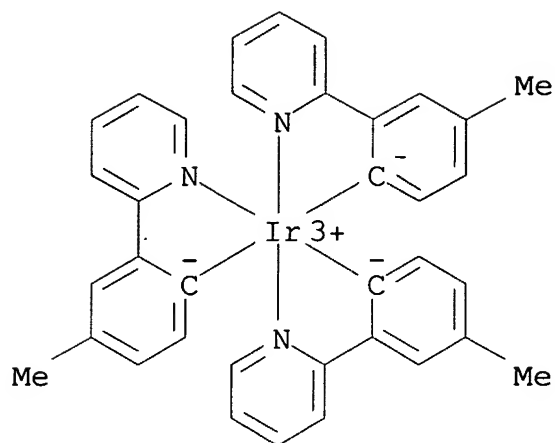
RN 376367-95-2 HCA

CN Iridium, bis[3,5-difluoro-2-(2-pyridinyl-κN)phenyl-κC] (2,4-pentanedionato-κO,κO') - (9CI) (CA INDEX NAME)



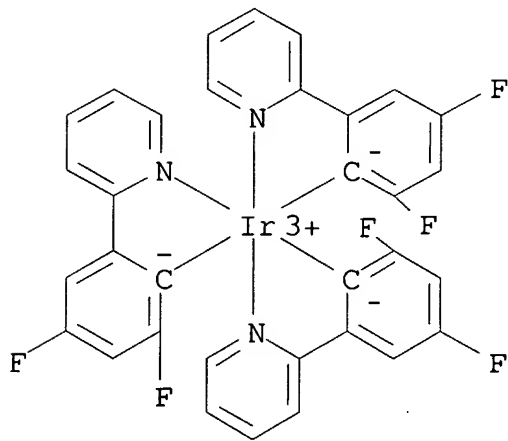
RN 474948-19-1 HCA

CN Iridium, tris[4-methyl-2-(2-pyridinyl-κN)phenyl-κC] (2,4-pentanedionato-κO,κO') - (9CI) (CA INDEX NAME)



RN 500295-32-9 HCA

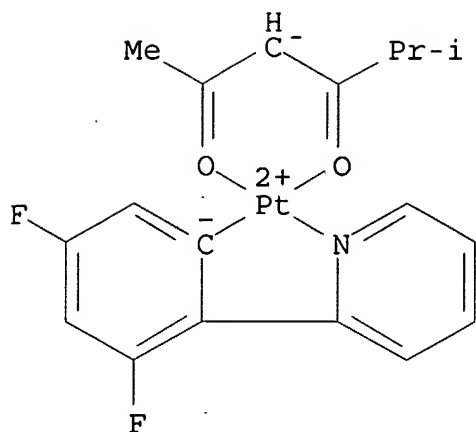
CN Iridium, tris[2,4-difluoro-6-(2-pyridinyl-.kappa.N)phenyl-.kappa.C] - (9CI) (CA INDEX NAME)



RN 562043-95-2 HCA

CN Platinum, [3,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C] (5-methyl-2,4-hexanedionato-.kappa.O,.kappa.O')-, (SP-4-3) - (9CI) (CA INDEX NAME)



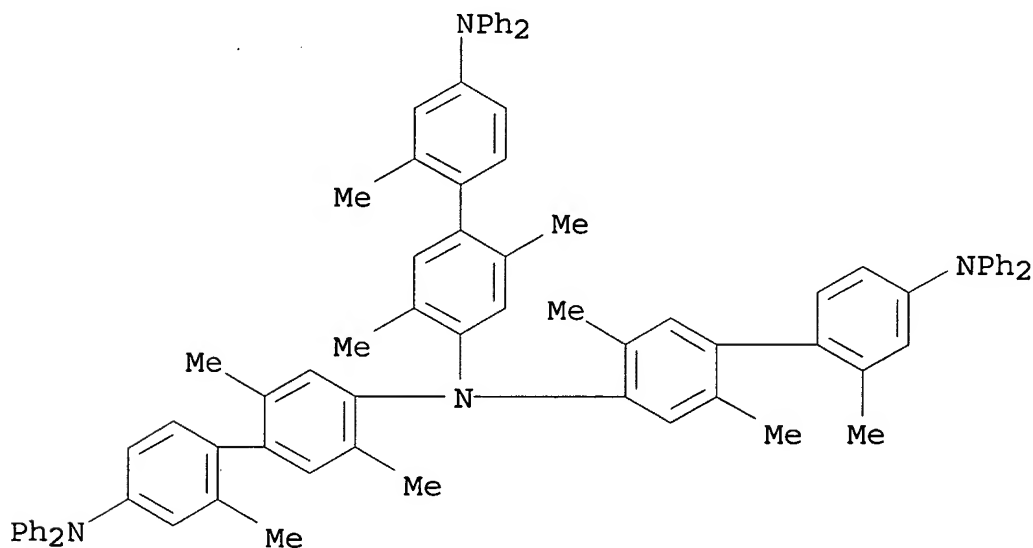


IT 655240-55-4

(hole-transport layer; org. EL elements contg.  
triphenylamine-based compds. with improved brightness and  
durability for displays)

RN 655240-55-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(diphenylamino)-2,2',5-trimethyl[1,1'-biphenyl]-4-yl]-2,2',5-trimethyl-N',N'-diphenyl-  
(9CI) (CA INDEX NAME)



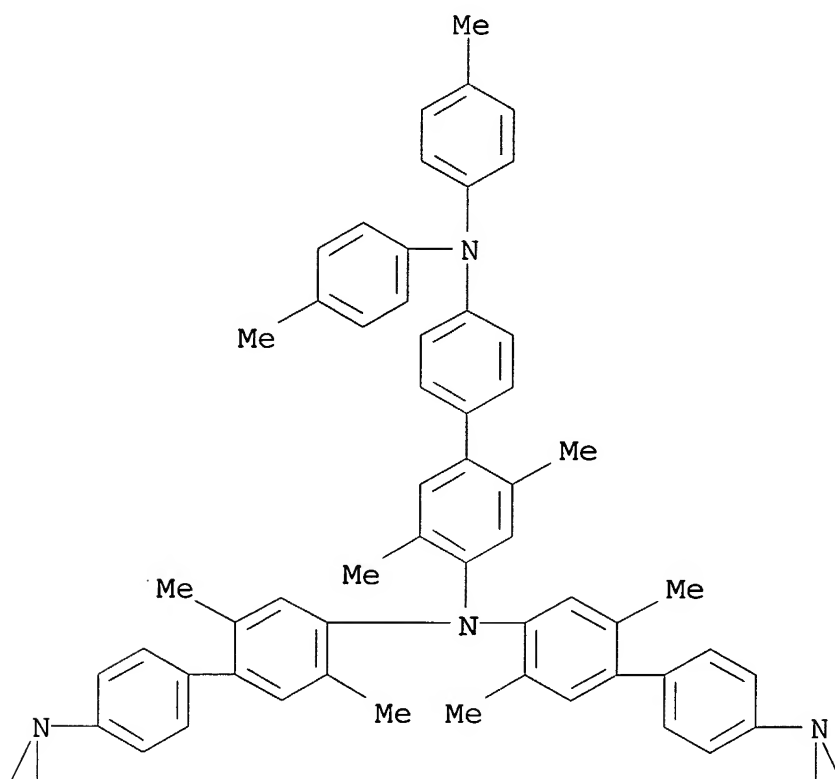
IT 655240-65-6

(light-emitting layer; org. EL  
elements contg. triphenylamine-based compds. with improved  
brightness and durability for displays)

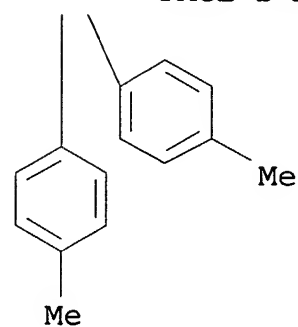
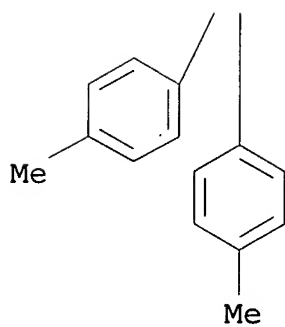
RN 655240-65-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-methylphenyl)amino]-2,5-dimethyl[1,1'-biphenyl]-4-yl]-2,5-dimethyl-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM H05B033-14  
ICS C09K011-06

- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 73
- ST org **electroluminescent** element hole transporter  
tribiphenylamine; **EL** display iridium phosphor dopant  
durability; phenylamine host org **EL** display brightness
- IT **Electroluminescent** devices  
(displays; org. **EL** elements contg. triphenylamine-based  
compds. with improved brightness and durability for displays)
- IT Group VIII element complexes  
(dopant, **light-emitting** layer; org.  
**EL** elements contg. triphenylamine-based compds. with  
improved brightness and durability for displays)
- IT **Luminescent** screens  
Phosphors  
(**electroluminescent**; org. **EL**  
elements contg. triphenylamine-based compds. with improved  
brightness and durability for displays)
- IT 31248-39-2 94928-86-6 337526-85-9  
337526-98-4 343978-78-9 343978-79-0  
370878-74-3 376367-95-2 474948-19-1  
500295-32-9 562043-95-2  
(dopant, **light-emitting** layer; org.  
**EL** elements contg. triphenylamine-based compds. with  
improved brightness and durability for displays)
- IT 405171-49-5 655240-48-5 655240-49-6 655240-50-9 655240-51-0  
655240-52-1 655240-53-2 655240-54-3 **655240-55-4**  
655240-56-5 655240-57-6  
(hole-transport layer; org. **EL** elements contg.  
triphenylamine-based compds. with improved brightness and  
durability for displays)
- IT 405171-87-1 655240-47-4  
(hole-transport or **light-emitting** layer; org.  
**EL** elements contg. triphenylamine-based compds. with  
improved brightness and durability for displays)
- IT 58328-31-7 363607-70-9 405172-39-6 405173-85-5 655240-58-7  
655240-59-8 655240-60-1 655240-61-2 655240-62-3 655240-63-4  
655240-64-5 **655240-65-6**  
(**light-emitting** layer; org. **EL**  
elements contg. triphenylamine-based compds. with improved  
brightness and durability for displays)
- L36 ANSWER 7 OF 10 HCA COPYRIGHT 2005 ACS on STN
- 140:172300 Organic **electroluminescent** elements with improved  
brightness and durability and displays using them. Ueda, Noriko;  
Yamada, Taketoshi; Oshiyama, Tomohiro; Kita, Hiroshi (Konica Minolta  
Holdings Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2004047442 A2  
20040212, 43 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP

2003-132872 20030512. PRIORITY: JP 2002-138307 20020514.

AB The elements contain R1R2NQ1Q2NR3R4 [R1-4 = (un)substituted Ph; Q1,2 = (un)substituted p-phenylene; Q1 = Q2 .noteq. p-phenylene], preferably in hole-transport layers. The elements may have **light-emitting** layers contg. phosphorescent complexes of Group VIII metals (Os, Ir, or Pt, preferably) and .gtoreq.1 fluorescent compds. having max. fluorescence wavelength longer than max. emission wavelength of the complexes.

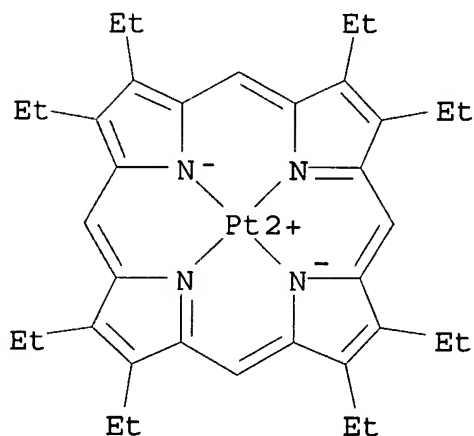
IT 31248-39-2 94928-86-6 337526-85-9  
337526-98-4 343978-78-9 343978-79-0  
370878-74-3 376367-95-2 474948-19-1  
500295-32-9 562043-95-2

(dopant, **light-emitting** layer; org.

**EL** elements contg. tetraphenylbenzidine-based compds. with improved brightness and durability for displays)

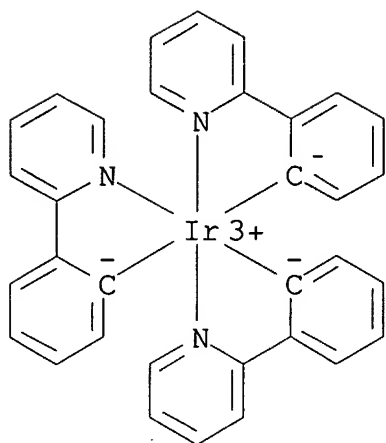
RN 31248-39-2 HCA

CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1) - (9CI) (CA INDEX NAME)



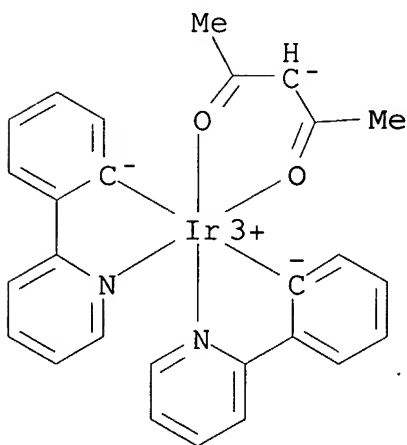
RN 94928-86-6 HCA

CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22) - (9CI) (CA INDEX NAME)



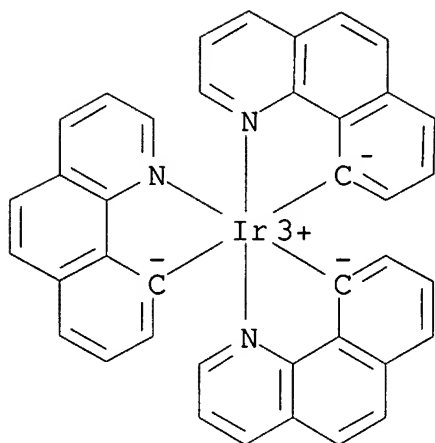
RN 337526-85-9 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33) - (9CI) (CA INDEX NAME)



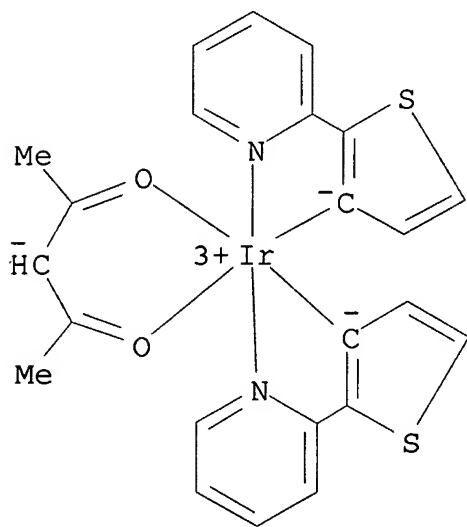
RN 337526-98-4 HCA

CN Iridium, tris(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)-, (OC-6-22) - (9CI) (CA INDEX NAME)



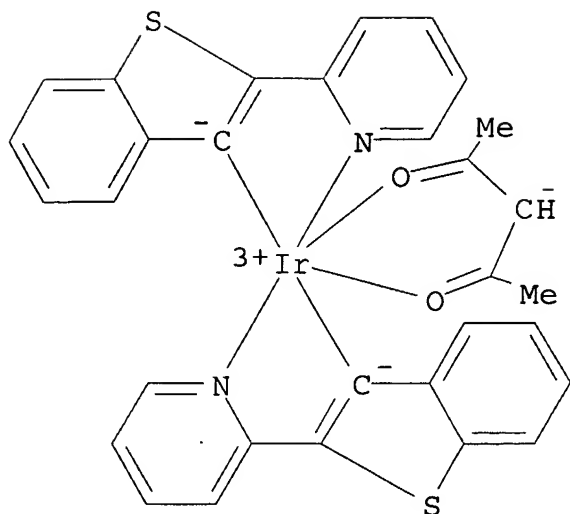
RN 343978-78-9 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



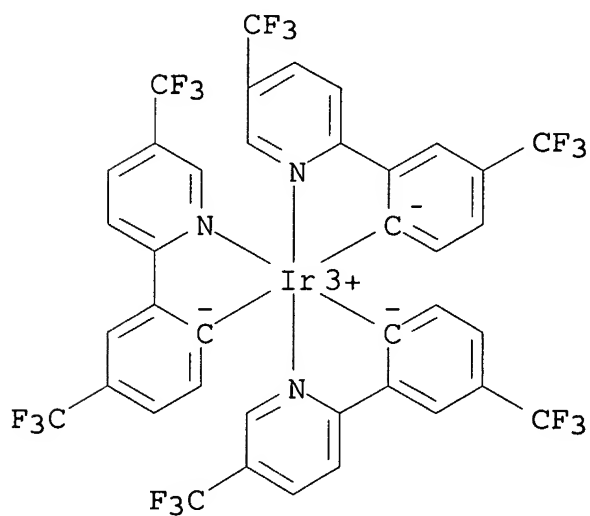
RN 343978-79-0 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



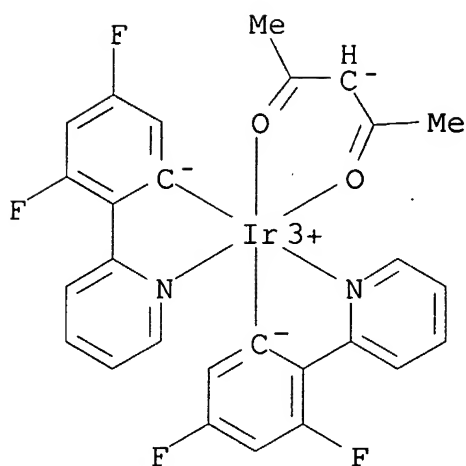
RN 370878-74-3 HCA

CN Iridium, tris[4-(trifluoromethyl)-2-[5-(trifluoromethyl)-2-pyridinyl-.kappa.N]phenyl-.kappa.C]-, (OC-6-22) - (9CI) (CA INDEX NAME)



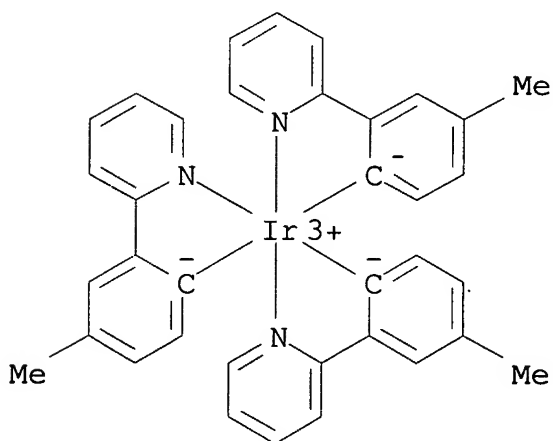
RN 376367-95-2 HCA

CN Iridium, bis[3,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C] (2,4-pentanedionato-.kappa.O,.kappa.O') - (9CI) (CA INDEX NAME)



RN 474948-19-1 HCA

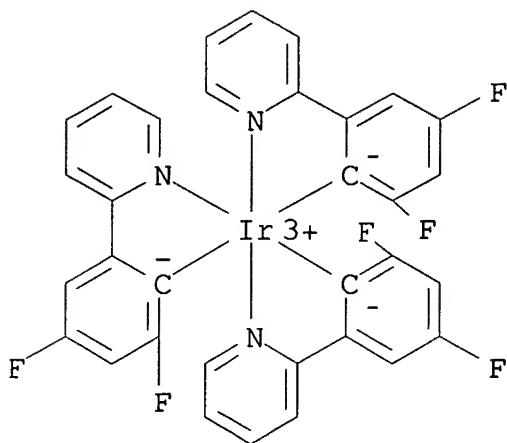
CN Iridium, tris[4-methyl-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C] -  
(9CI) (CA INDEX NAME)



RN 500295-32-9 HCA

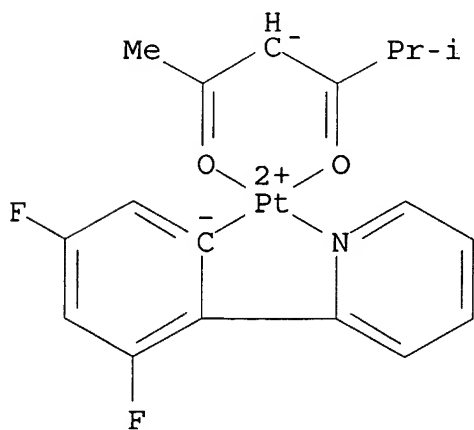
CN Iridium, tris[2,4-difluoro-6-(2-pyridinyl-.kappa.N)phenyl-.kappa.C] -  
(9CI) (CA INDEX NAME)





RN 562043-95-2 HCA

CN Platinum, [3,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C] (5-methyl-2,4-hexanedionato-.kappa.O,.kappa.O')-, (SP-4-3) - (9CI) (CA INDEX NAME)

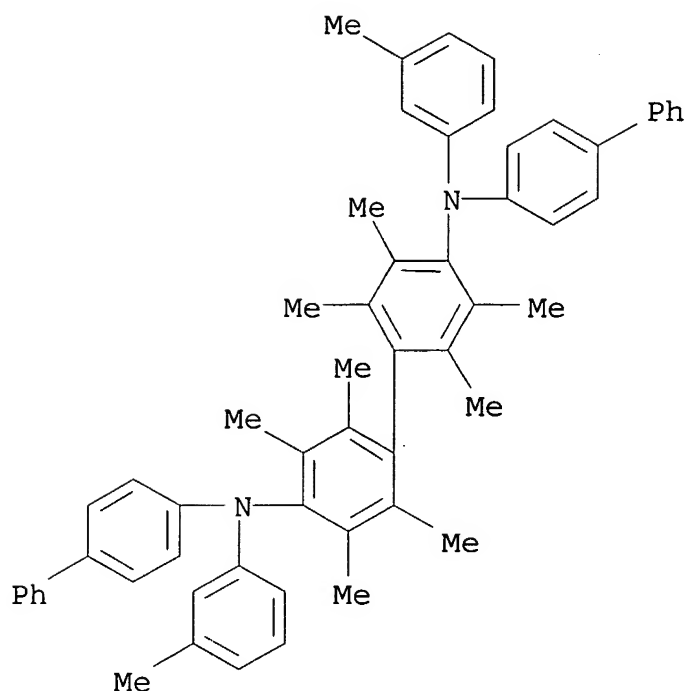


IT 478370-39-7 655236-05-8 655236-07-0  
655236-08-1 655236-10-5 655236-11-6  
655236-12-7

(hole-transport layer; org. EL elements contg.  
tetraphenylbenzidine-based compds. with improved brightness and  
durability for displays)

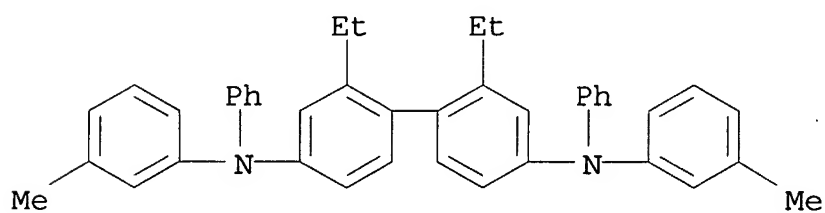
RN 478370-39-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-  
2,2',3,3',5,5',6,6'-octamethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA  
INDEX NAME)



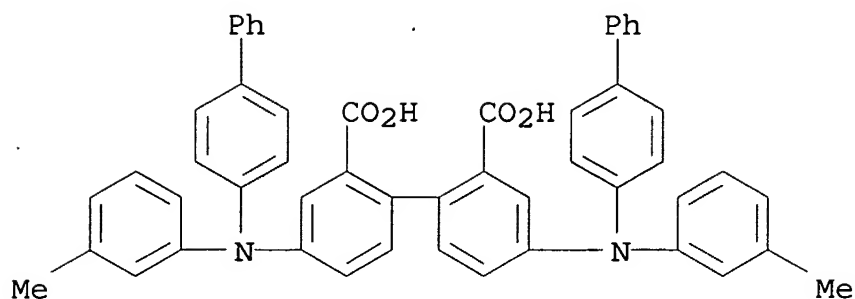
RN 655236-05-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-diethyl-N,N'-bis(3-methylphenyl)-  
N,N'-diphenyl- (9CI) (CA INDEX NAME)

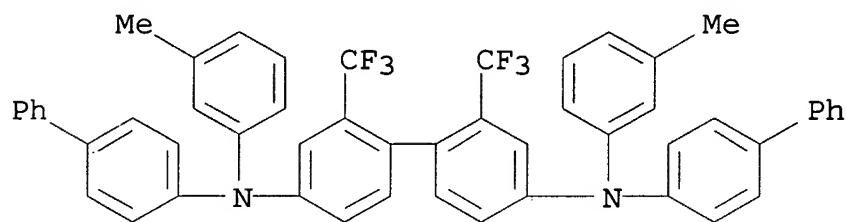


RN 655236-07-0 HCA

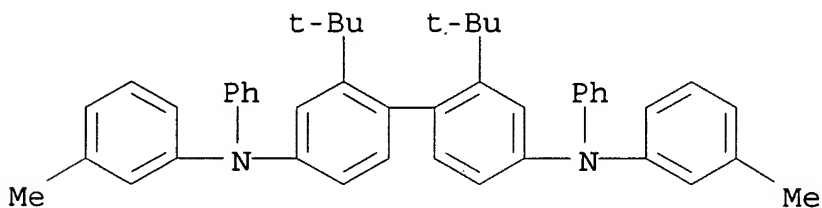
CN [1,1'-Biphenyl]-2,2'-dicarboxylic acid, 4,4'-bis[[1,1'-biphenyl]-4-  
yl(3-methylphenyl)amino]- (9CI) (CA INDEX NAME)



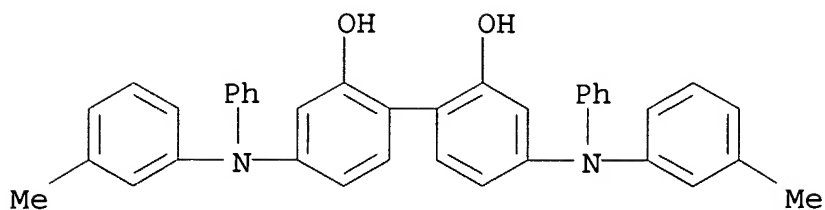
RN 655236-08-1 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-N,N'-bis(3-methylphenyl)-2,2'-bis(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 655236-10-5 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-bis(1,1-dimethylethyl)-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)

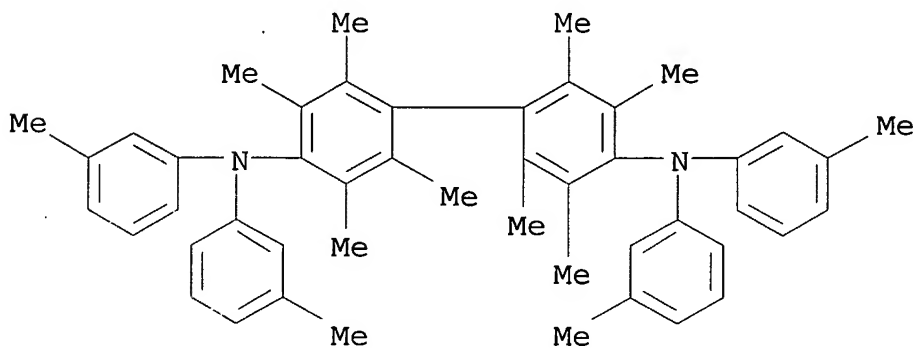


RN 655236-11-6 HCA  
 CN [1,1'-Biphenyl]-2,2'-diol, 4,4'-bis[(3-methylphenyl)phenylamino]- (9CI) (CA INDEX NAME)



RN 655236-12-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',5,5',6,6'-octamethyl-N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



IT 453590-46-0 478262-76-9 478370-42-2

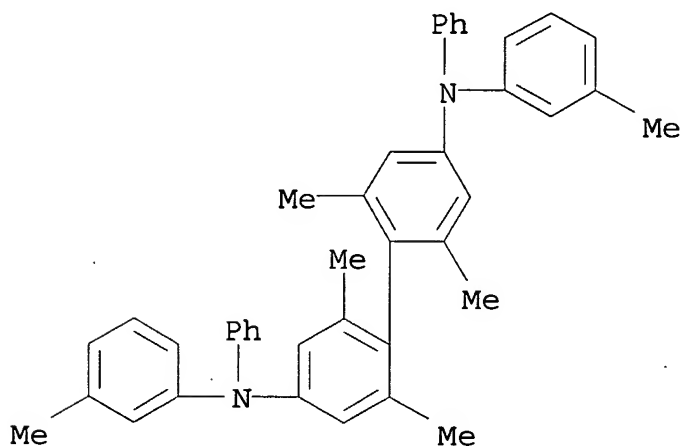
655236-06-9 655236-09-2 655236-13-8

(hole-transport or light-emitting layer; org.

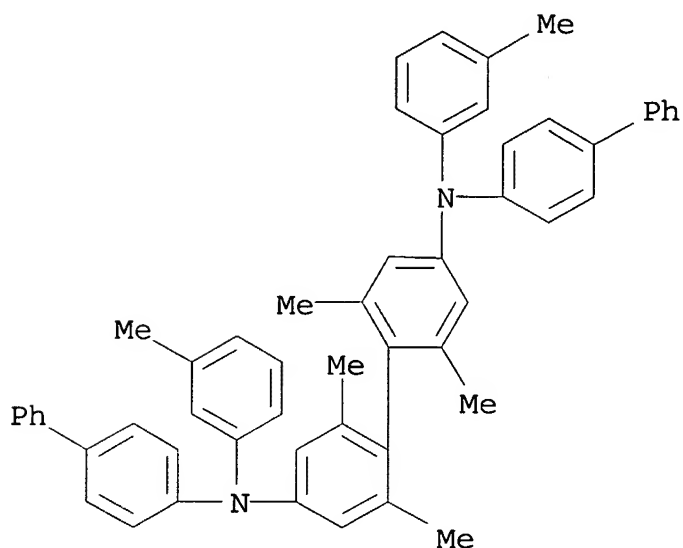
EL elements contg. tetraphenylbenzidine-based compds.  
with improved brightness and durability for displays)

RN 453590-46-0 HCA

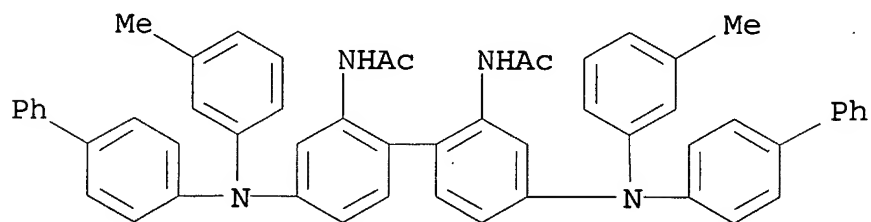
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



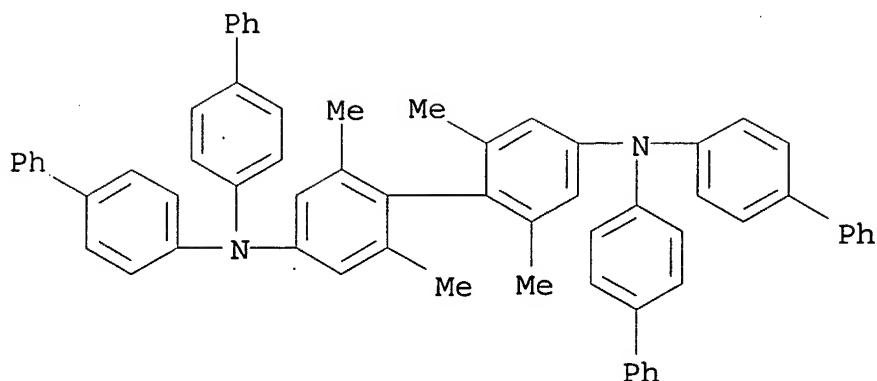
RN 478262-76-9 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-  
 2,2',6,6'-tetramethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX  
 NAME)



RN 478370-42-2 HCA  
 CN Acetamide, N,N'-[4,4'-bis[[1,1'-biphenyl]-4-yl(3-methylphenyl)amino][1,1'-biphenyl]-2,2'-diyl]bis- (9CI) (CA INDEX  
 NAME)

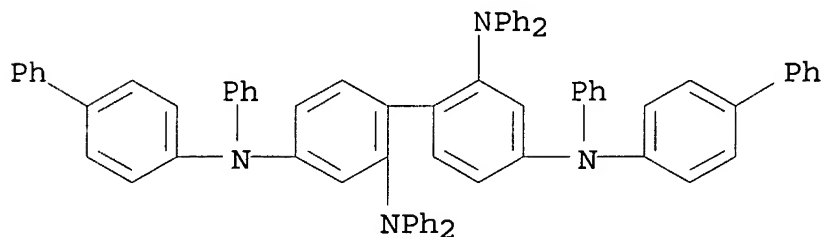


RN 655236-06-9 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'-tetrakis([1,1'-biphenyl]-4-yl)-2,2',6,6'-tetramethyl- (9CI) (CA INDEX NAME)



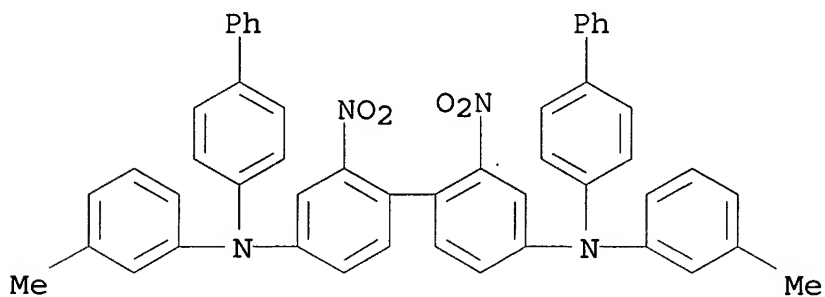
RN 655236-09-2 HCA

CN [1,1'-Biphenyl]-2,2',4,4'-tetramine, N4,N4'-bis([1,1'-biphenyl]-4-yl)-N2,N2,N2',N2',N4,N4'-hexaphenyl- (9CI) (CA INDEX NAME)



RN 655236-13-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-N,N'-bis(3-methylphenyl)-2,2'-dinitro- (9CI) (CA INDEX NAME)



IT 453590-45-9 478262-77-0 478370-41-1

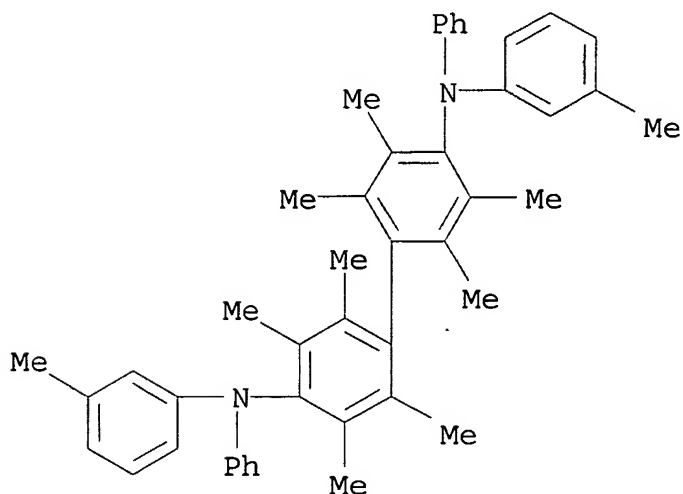
655236-14-9 655236-15-0 655236-16-1

655236-17-2

(light-emitting layer; org. EL elements contg. tetraphenylbenzidine-based compds. with improved brightness and durability for displays)

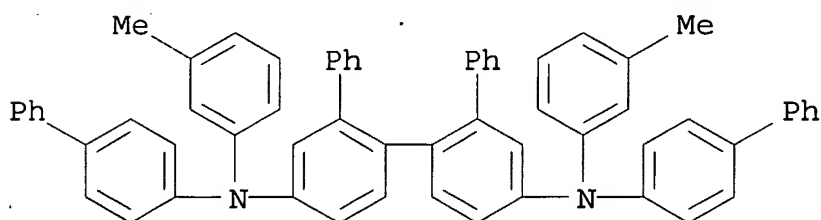
RN 453590-45-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',5,5',6,6'-octamethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



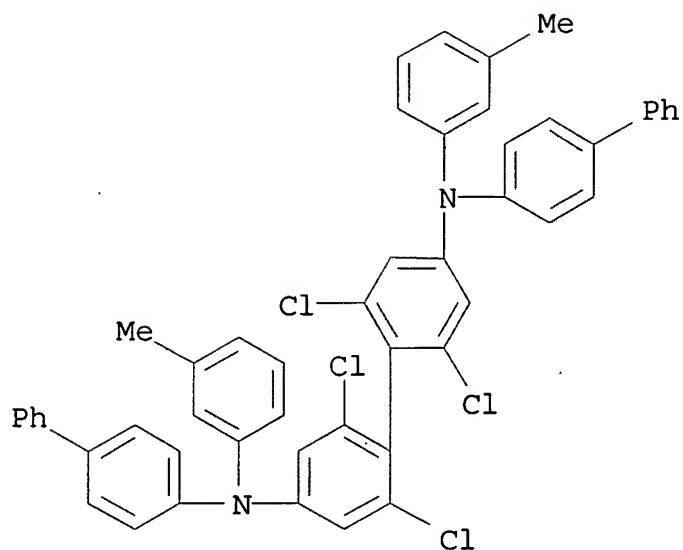
RN 478262-77-0 HCA

CN [1,1':2',1'':2'',1''':2''',1''''-Quaterphenyl]-4'',5'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



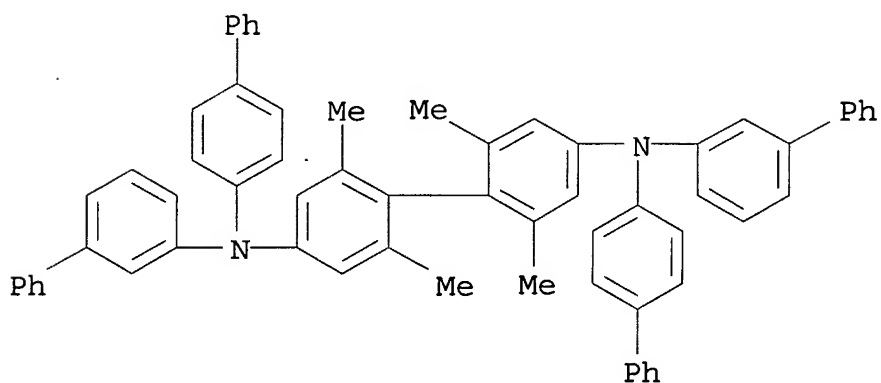
RN 478370-41-1 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-2,2',6,6'-tetrachloro-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 655236-14-9 HCA

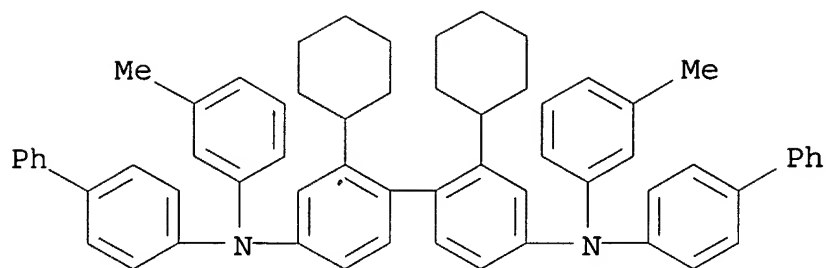
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-3-yl)-N,N'-bis([1,1'-biphenyl]-4-yl)-2,2',6,6'-tetramethyl- (9CI) (CA INDEX NAME)



RN 655236-15-0 HCA

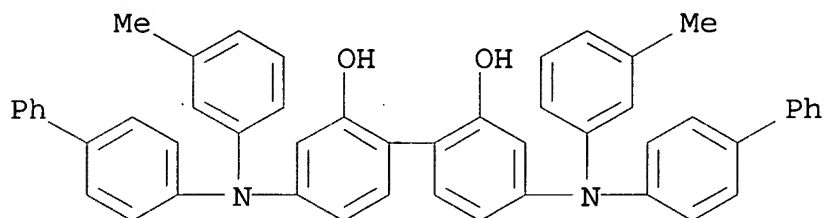
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-2,2'-dicyclohexyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)





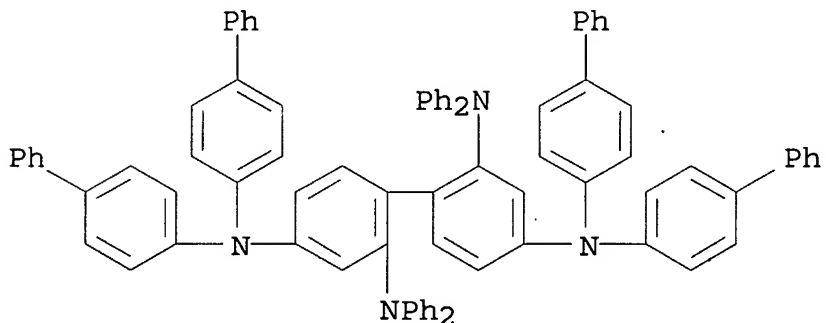
RN 655236-16-1 HCA

CN [1,1'-Biphenyl]-2,2'-diol, 4,4'-bis[[1,1'-biphenyl]-4-yl(3-methylphenyl)amino] - (9CI) (CA INDEX NAME)



RN 655236-17-2 HCA

CN [1,1'-Biphenyl]-2,2',4,4'-tetramine, N4,N4,N4',N4'-tetrakis([1,1'-biphenyl]-4-yl)-N2,N2,N2',N2'-tetraphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-22

ICS C09K011-06; H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 73

ST org **electroluminescent** element hole transporter

tetraphenylbenzidine; **EL** display iridium phosphor dopant

durability; phenylbenzidine host org **EL** display brightness

- IT **Electroluminescent** devices  
(displays; org. **EL** elements contg. tetraphenylbenzidine-based compds. with improved brightness and durability for displays)
- IT Group VIII element complexes  
(dopant, **light-emitting** layer; org. **EL** elements contg. tetraphenylbenzidine-based compds. with improved brightness and durability for displays)
- IT **Luminescent** screens  
Phosphors  
(**electroluminescent**; org. **EL** elements contg. tetraphenylbenzidine-based compds. with improved brightness and durability for displays)
- IT 31248-39-2 94928-86-6 337526-85-9  
337526-98-4 343978-78-9 343978-79-0  
370878-74-3 376367-95-2 474948-19-1  
500295-32-9 562043-95-2  
(dopant, **light-emitting** layer; org. **EL** elements contg. tetraphenylbenzidine-based compds. with improved brightness and durability for displays)
- IT 478370-39-7 655236-05-8 655236-07-0  
655236-08-1 655236-10-5 655236-11-6  
655236-12-7  
(hole-transport layer; org. **EL** elements contg. tetraphenylbenzidine-based compds. with improved brightness and durability for displays)
- IT 453590-46-0 478262-76-9 478370-42-2  
655236-06-9 655236-09-2 655236-13-8  
(hole-transport or **light-emitting** layer; org. **EL** elements contg. tetraphenylbenzidine-based compds. with improved brightness and durability for displays)
- IT 58328-31-7 453590-45-9 478262-77-0  
478370-41-1 655236-14-9 655236-15-0  
655236-16-1 655236-17-2  
(**light-emitting** layer; org. **EL** elements contg. tetraphenylbenzidine-based compds. with improved brightness and durability for displays)
- L36 ANSWER 8 OF 10 HCA COPYRIGHT 2005 ACS on STN  
139:314295 Organic **electroluminescence** element. Oshiyama, Tomohiro; Kita, Hiroshi; Yamada, Taketoshi (Konica Corporation, Japan). Eur. Pat. Appl. EP 1353388 A2 20031015, 22 pp.  
DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-7431 20030403. PRIORITY: JP 2002-110303 20020412.
- AB An org. **electroluminescence** element is disclosed which comprises a hole transporting layer contg. a hole transporting

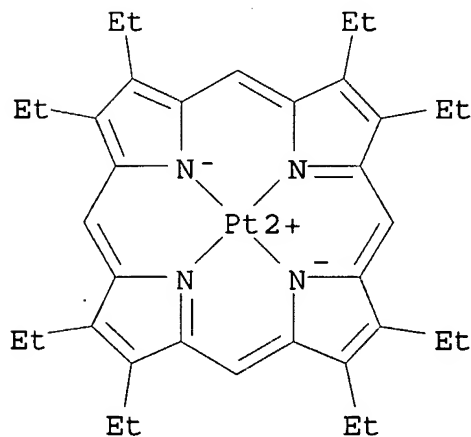
material, a **light emission** layer contg. a host compd. and a phosphorescent compd., a hole blocking layer, and an electron transporting layer, the host compd. having a band gap of 3.3-5 eV, and having a mol. wt. of  $\geq 500$ , and relation  $c < d$  being satisfied, wherein  $c$  (eV) represents a difference between energy level of LUMO in the hole blocking layer and energy level of LUMO in the **light emission** layer and  $d$  (eV) represents a difference between energy level of HOMO in the hole blocking layer and energy level of HOMO in the **light emission** layer.

IT 31248-39-2 52309-01-0 65181-79-5,  
2,2'-Dimethyl-4,4'-[N,N'-di(3-methylphenyl)-N,N'-diphenylamino]-1,1'-biphenyl 88821-71-0 94928-86-6  
149005-33-4 337526-85-9, Acetylacetonatobis[2-(2-pyridyl)phenyl]iridium 337526-98-4, Iridium,  
tris(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)-, (OC-6-22)-  
343978-78-9 343978-79-0 344796-22-1  
344796-24-3 376367-93-0 376367-95-2  
387859-70-3 612519-55-8

(org. electroluminescent element contg.)

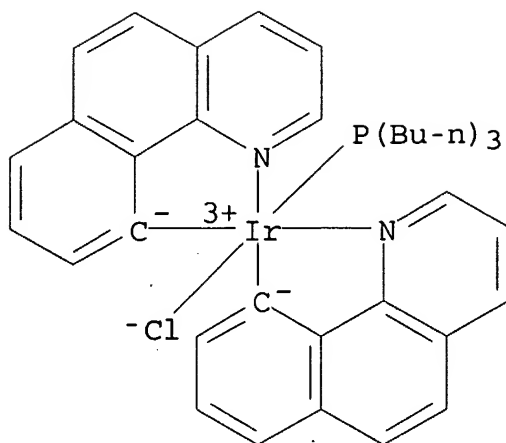
RN 31248-39-2 HCA

CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



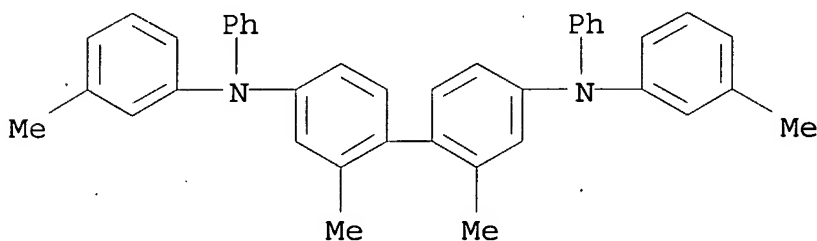
RN 52309-01-0 HCA

CN Iridium, bis(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)chloro(tributylphosphine)-, (OC-6-44)- (9CI) (CA INDEX NAME)



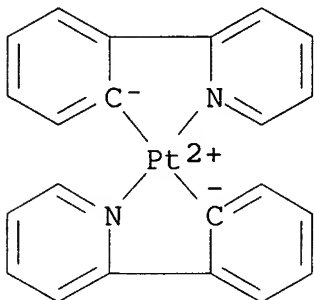
RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



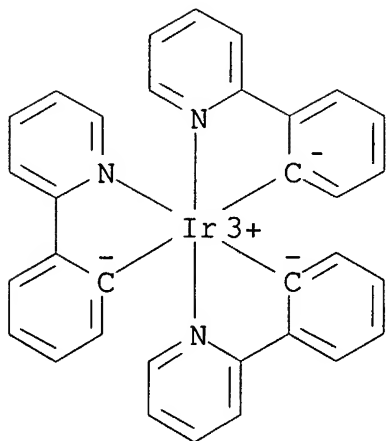
RN 88821-71-0 HCA

CN Platinum, bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (SP-4-2)-(9CI) (CA INDEX NAME)



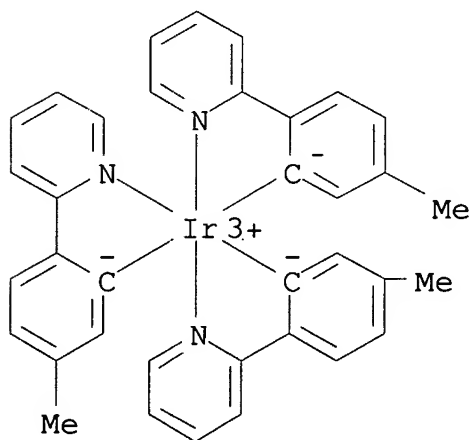
RN 94928-86-6 HCA

CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)-(9CI) (CA INDEX NAME)



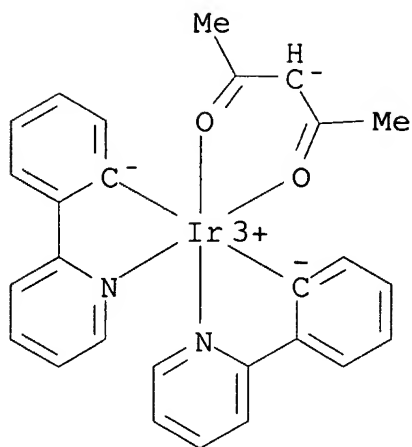
RN 149005-33-4 HCA

CN Iridium, tris[5-methyl-2-(2-pyridinyl)phenyl-C,N]-, (OC-6-22) - (CA INDEX NAME)



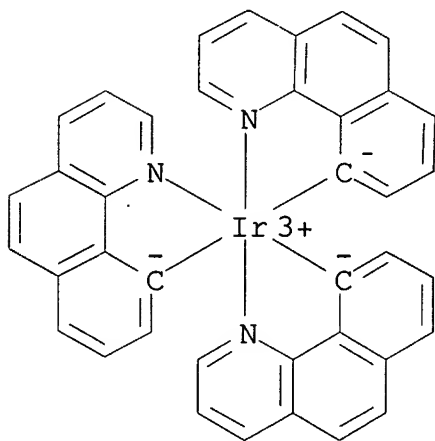
RN 337526-85-9 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33) - (9CI) (CA INDEX NAME)



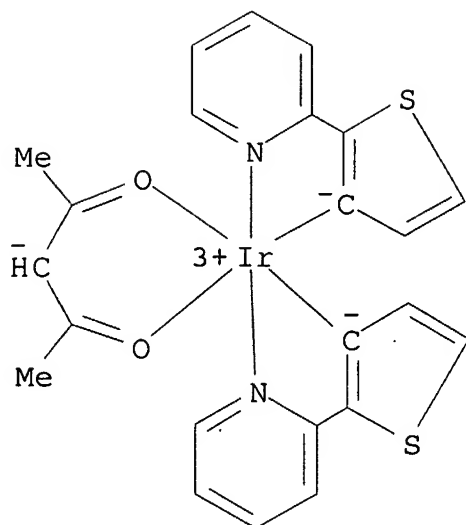
RN 337526-98-4 HCA

CN Iridium, tris(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)-, (OC-6-22)-(9CI) (CA INDEX NAME)



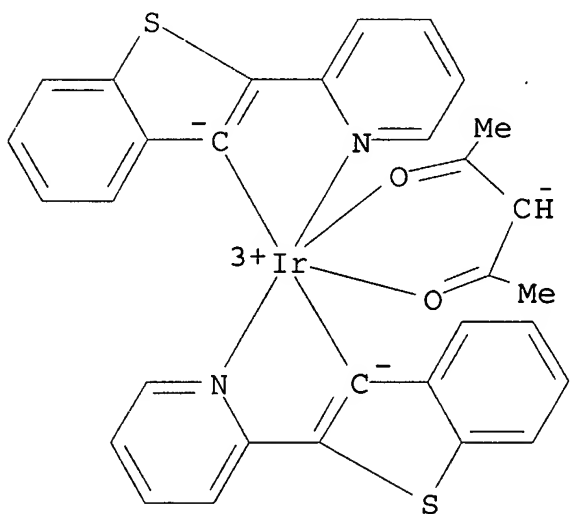
RN 343978-78-9 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-33)-(9CI) (CA INDEX NAME)



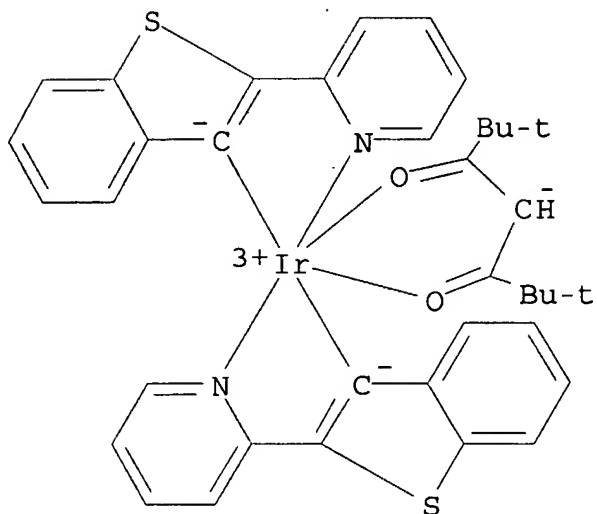
RN 343978-79-0 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)-(9CI) (CA INDEX NAME)



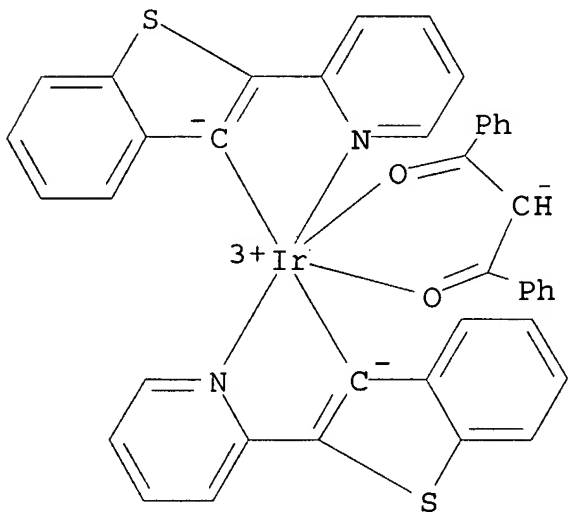
RN 344796-22-1 HCA

CN Iridium, bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C](2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')-, (OC-6-33)-(9CI) (CA INDEX NAME)



RN 344796-24-3 HCA

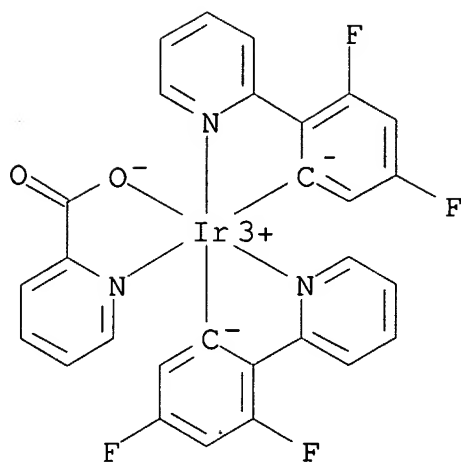
CN Iridium, (1,3-diphenyl-1,3-propanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)-(9CI) (CA INDEX NAME)



RN 376367-93-0 HCA

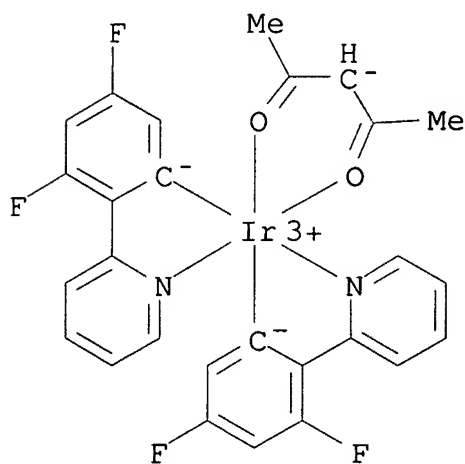
CN Iridium, bis[3,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](2-pyridinecarboxylato-.kappa.N1,.kappa.O2)-(9CI) (CA INDEX NAME)





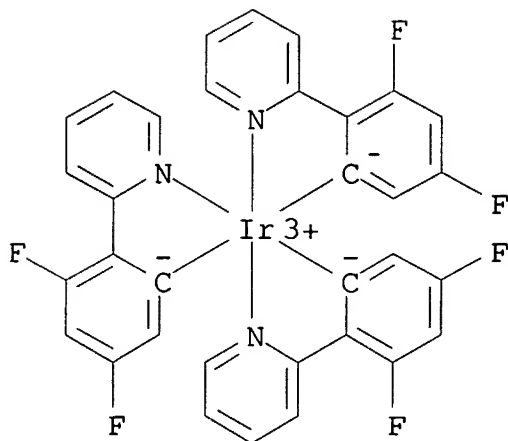
RN 376367-95-2 HCA

CN Iridium, bis[3,5-difluoro-2-(2-pyridinyl-κ.N)phenyl-κ.C] (2,4-pentanedionato-κ.O, κ.O') - (9CI) (CA INDEX NAME)

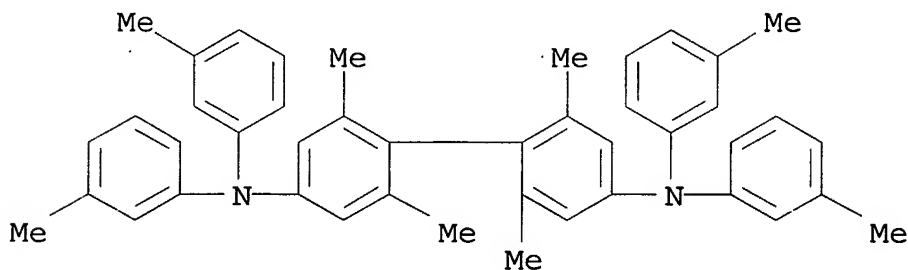


RN 387859-70-3 HCA

CN Iridium, tris[3,5-difluoro-2-(2-pyridinyl-κ.N)phenyl-κ.C] - (9CI) (CA INDEX NAME)



RN 612519-55-8 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N,N,N',N'-  
 tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H01L051-30  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 76  
 ST org **electroluminescent** device phosphorescent compd  
 electron hole transporting layer  
 IT Phosphorescent substances  
 (in org. **electroluminescent** element)  
 IT Band gap  
 HOMO (molecular orbital)  
 LUMO (molecular orbital)  
 (of electron and hole transporting layers in org.  
**electroluminescent** element)  
 IT **Electroluminescent** devices  
 (org. element)  
 IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 4733-39-5,  
 2,9-Dimethyl-4,7-diphenyl-1,10-phenanthroline 16152-10-6,  
 4-(1-Naphthyl)-3,5-diphenyl-1,2,4-triazole 31248-39-2

52309-01-0 58328-31-7, 4,4'-Bis(N-carbazolyl)-1,1'-biphenyl 65181-79-5, 2,2'-Dimethyl-4,4'-[N,N'-di(3-methylphenyl)-N,N'-diphenylamino]-1,1'-biphenyl 88821-71-0 94928-86-6 105465-14-3, 3,3'-Dimethyl-4,4'-[N,N,N',N'-tetrakis(3-methylphenyl)amino]-1,1'-biphenyl 123847-85-8, .alpha.-NPD 149005-33-4 219303-85-2, 2,4,4',4''-Tetrakis(N-carbazolyl)triphenylamine 337526-85-9, Acetylacetonatobis[2-(2-pyridyl)phenyl]iridium 337526-98-4, Iridium, tris(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)-, (OC-6-22)- 343978-78-9 343978-79-0 344796-22-1 344796-24-3 376367-93-0 376367-95-2 387859-70-3 405171-87-1, N,N-Bis[2,5-dimethyl-4-[(3-methylphenyl)phenylamino]phenyl]-2,5-dimethyl-N'-(3-methylphenyl)-N'-phenyl-1,4-benzenediamine 405173-85-5 439899-44-2 492446-97-6 497097-21-9 567625-80-3 612519-47-8 612519-52-5 612519-55-8 (org. electroluminescent element contg.)

L36 ANSWER 9 OF 10 HCA COPYRIGHT 2005 ACS on STN

138:212610 Multicolor **light emission** apparatus and manufacturing method thereof. Suzuri, Yoshiyuki; Genda, Kazuo; Kita, Hiroshi (Konica Corporation, Japan). Eur. Pat. Appl. EP 1289015 A2 20030305, 46 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2002-18281 20020822. PRIORITY: JP 2001-257720 20010828.

AB Multicolored **light-emitting** app. comprising a first org. **electroluminescent** element having a first max. emission wavelength in a blue light wavelength region; and a second org. **electroluminescent** element having a second max. emission wavelength longer than the first max. emission wavelength are described in which the first org. **electroluminescent** element comprises a first **light emission** layer contg. a first host and a first dopant, and the second org. **electroluminescent** element comprises a second **light emission** layer contg. a second host and a second dopant, and each of the first and second hosts has an emission wavelength region which is shorter than the blue light wavelength region. Preferably, the first org. **electroluminescent** element comprises a first **light emission** layer contg. a first host and a first dopant, a first hole transporting layer contg. a first compd., which is provided adjacent to one side of the first **light emission** layer, and a first electron transporting layer contg. a second compd., which is provided adjacent to another side of the first **light emission** layer, and the second org. **electroluminescent** element comprises a second **light**

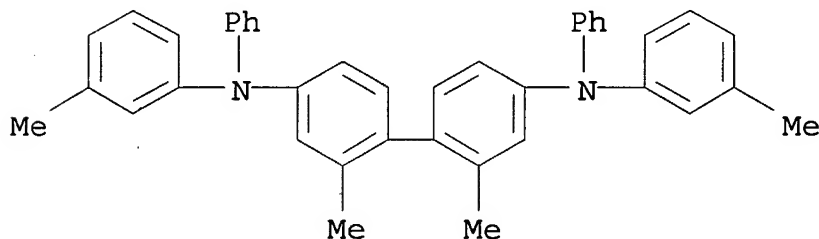
**emission** layer contg. a second host and a second dopant, a second hole transporting layer contg. a third compd., which is provided adjacent to one side of the second **light emission** layer, and a second electron transporting layer contg. a fourth compd., which is provided adjacent to another side of the second **light emission** layer, and the max. emission wavelength of the first and second hosts is  $\leq 415$  nm, the max. emission wavelength of the first compd. and the max. emission wavelength of the third compd. are  $\leq 415$  nm and are the same, and the max. emission wavelength of the second compd. and the max. emission wavelength of the fourth compd. are  $\leq 415$  nm and are the same. Methods for fabricating the elements are described which entail simultaneously forming the hole transporting layer of each of the org. **electroluminescent** elements, sep. forming the **light emission** layer of each of the org. **electroluminescent** elements, and simultaneously forming the electron transporting layer or the hole blocking layer of each of the org. **electroluminescent** elements. Use of the elements in displays and as light sources for copiers and printers is indicated.

IT 65181-79-5 94928-86-6 343978-79-0  
376367-93-0

(multicolor multielement **light-emitting**  
devices and their fabrication)

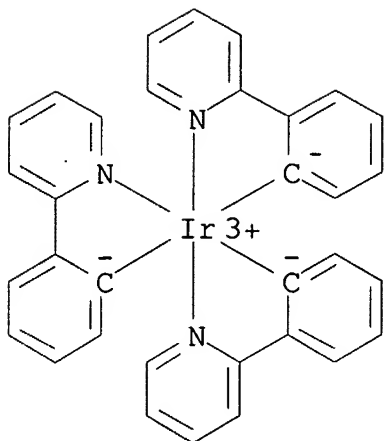
RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



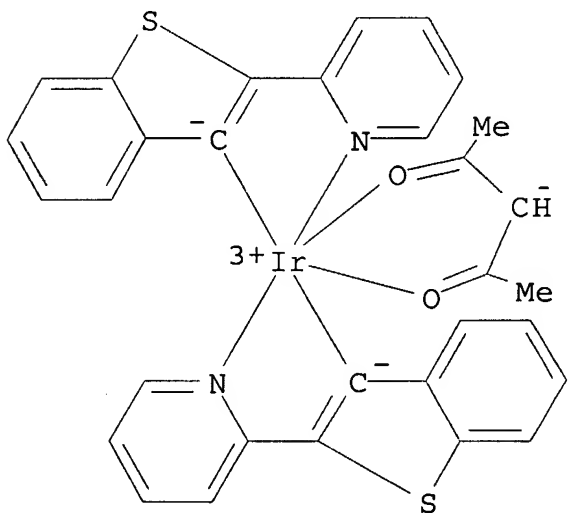
RN 94928-86-6 HCA

CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22) - (9CI) (CA INDEX NAME)



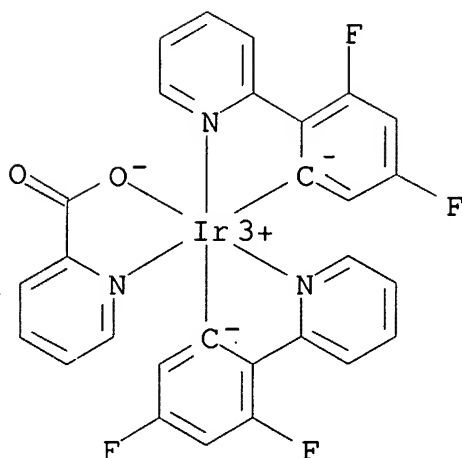
RN 343978-79-0 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 376367-93-0 HCA

CN Iridium, bis[3,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C] (2-pyridinecarboxylato-.kappa.N1,.kappa.O2)- (9CI) (CA INDEX NAME)



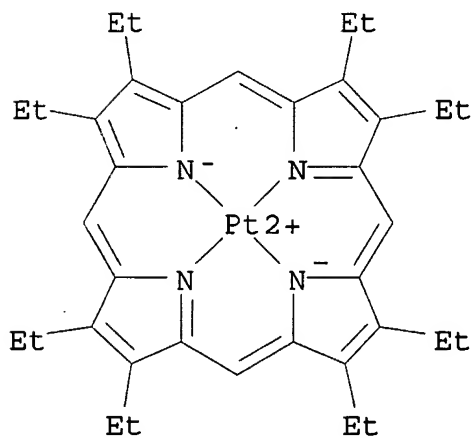
- IC ICM H01L027-00  
ICS H01L051-30
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 74, 76
- ST multicolor multielement **light emitting** device fabrication
- IT Semiconductor device fabrication  
(multicolor multielement **light-emitting** devices and their fabrication)
- IT **Electroluminescent** devices  
(org.; multicolor multielement **light-emitting** devices and their fabrication)
- IT 1450-63-1, TPB 2085-33-8, Tris(8-hydroxyquinolinato)aluminum  
4733-39-5, Bathocuproine 51325-95-2, DCM II 58328-31-7  
**65181-79-5 94928-86-6** 123847-85-8, .alpha.-NPD  
124729-98-2, MTDATA 142289-08-5, DPVBi 144810-07-1 148896-39-3  
**343978-79-0 376367-93-0** 405171-87-1  
405173-85-5  
(multicolor multielement **light-emitting** devices and their fabrication)
- L36 ANSWER 10 OF 10 HCA COPYRIGHT 2005 ACS on STN
- 138:30905 Organic **electroluminescent** element and full color display. Oshiyama, Tomohiro; Yamada, Taketoshi; Kinoshita, Motoi; Kita, Hiroshi (Konica Corporation, Japan). Eur. Pat. Appl. EP 1267428 A2 **20021218**, 57 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2002-254090 20020612. PRIORITY: JP 2001-181543 20010615.

AB Org. **electroluminescent** elements are described which comprise a **light-emitting** layer contg. a fluorescent compd. and a phosphorescent compd., the fluorescent compd. having a nitrogen atom no. to carbon atom no. ratio in the mol. (N/C) of 0-0.05 and for which the max. **emission** wavelength of **light emitted** according to **electroluminescence** of the element is longer than the max. fluorescence wavelength of the fluorescent compd. Displays employing the elements are also described.

IT 31248-39-2 65181-79-5 94928-86-6  
 149005-33-4 337526-85-9 337526-98-4  
 343978-78-9 343978-79-0 400654-08-2  
 453590-51-7 478262-76-9 478262-77-0  
 (org. **electroluminescent** elements using mixed  
 fluorescent and phosphorescent materials and displays employing  
 them)

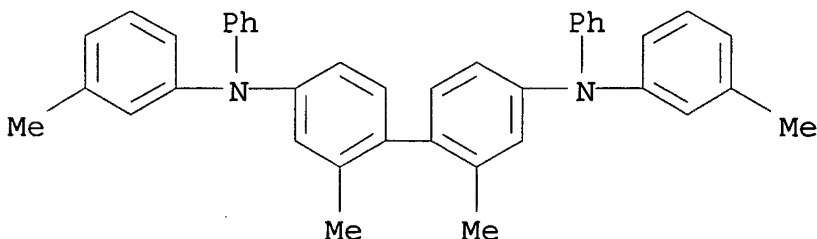
RN 31248-39-2 HCA

CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-  
 .kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA  
 INDEX NAME)



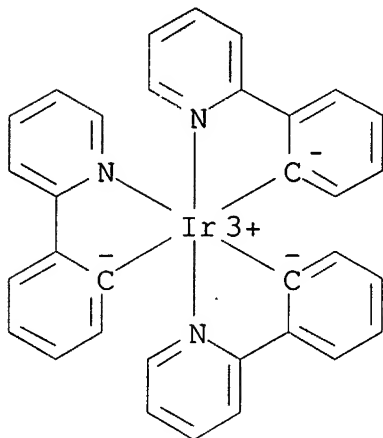
RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-  
 N,N'-diphenyl- (9CI) (CA INDEX NAME)



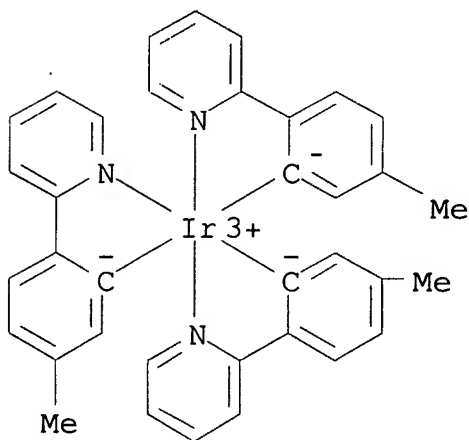
RN 94928-86-6 HCA

CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)-(9CI) (CA INDEX NAME)



RN 149005-33-4 HCA

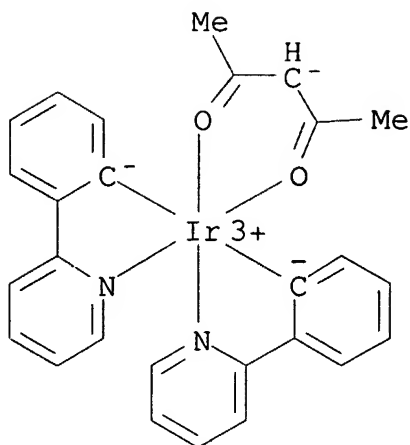
CN Iridium, tris[5-methyl-2-(2-pyridinyl)phenyl-C,N]-, (OC-6-22)-(CA INDEX NAME)



RN 337526-85-9 HCA

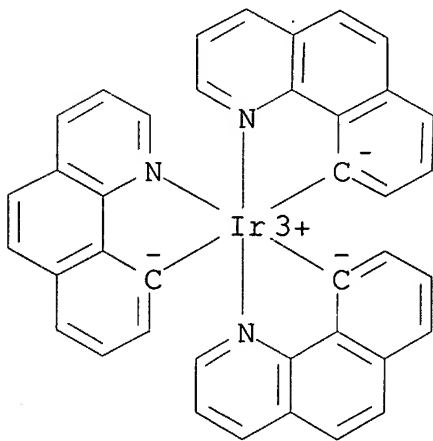
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33)-(9CI) (CA INDEX NAME)





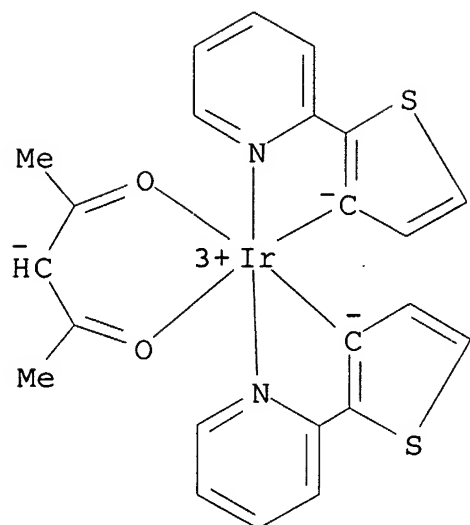
RN 337526-98-4 HCA

CN Iridium, tris(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)-, (OC-6-22)-(9CI) (CA INDEX NAME)



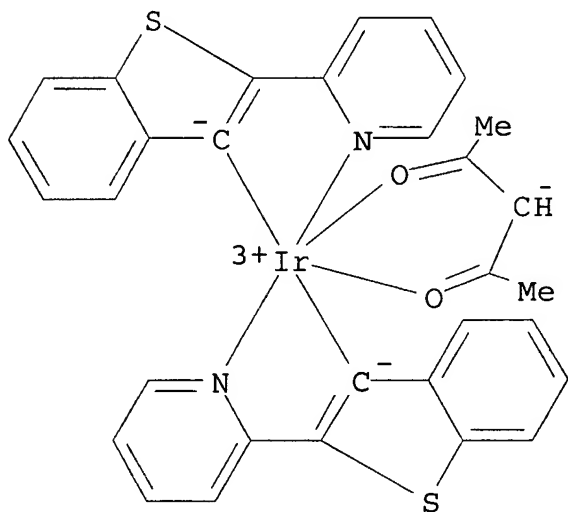
RN 343978-78-9 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-33)-(9CI) (CA INDEX NAME)



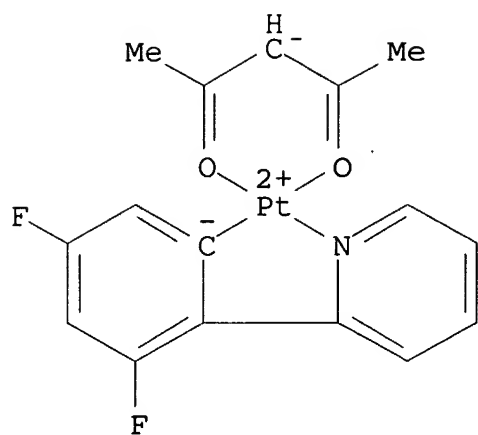
RN 343978-79-0 HCA

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)-(9CI) (CA INDEX NAME)



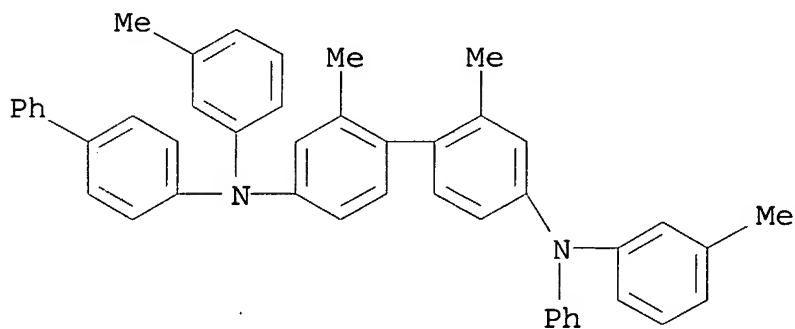
RN 400654-08-2 HCA

CN Platinum, [3,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (SP-4-3)-(9CI) (CA INDEX NAME)



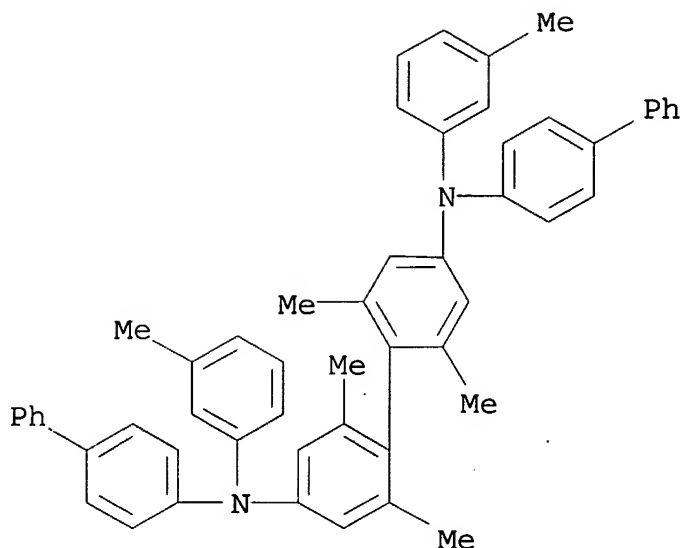
RN 453590-51-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N-[1,1'-biphenyl]-4-yl-2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N'-phenyl- (9CI) (CA INDEX NAME)



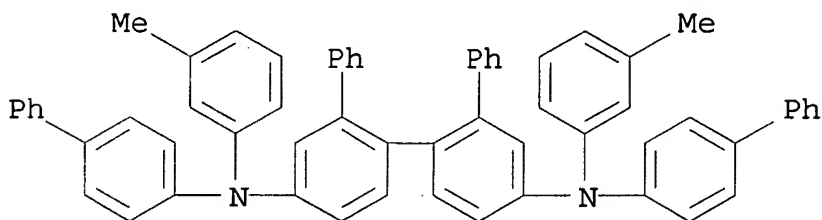
RN 478262-76-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-2,2',6,6'-tetramethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 478262-77-0 HCA

CN [1,1':2',1'':2''',1''':2''''-Quaterphenyl]-4'',5'-diamine,  
N,N'-bis([1,1'-biphenyl]-4-yl)-N,N'-bis(3-methylphenyl)- (9CI) (CA  
INDEX NAME)



IC ICM H01L051-20

ICS H01L027-00

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76

ST org **electroluminescent** element display fluorescent  
phosphorescent mixt

IT **Electroluminescent** devices

(displays; org. **electroluminescent** elements using mixed  
fluorescent and phosphorescent materials and displays employing  
them)

IT **Luminescent** screens

(**electroluminescent**; org.  
**electroluminescent** elements using mixed fluorescent and  
phosphorescent materials and displays employing them)

IT **Electroluminescent** devices  
Fluorescent substances  
Phosphorescent substances  
(org. **electroluminescent** elements using mixed  
fluorescent and phosphorescent materials and displays employing  
them)

IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 4733-39-5,  
Bathocuproin 7429-90-5, Aluminum, uses 7440-04-2D, Osmium,  
compds. 7789-24-4, Lithium fluoride, uses 31248-39-2  
37271-44-6 50926-11-9, ITO 51325-95-2, DCM2 65181-79-5  
94928-86-6 123847-85-8, .alpha.-NPD 149005-33-4  
337526-85-9 337526-98-4 343978-78-9  
343978-79-0 400654-08-2 405171-49-5  
405172-39-6 405173-85-5 453590-51-7 478262-73-6  
478262-74-7 478262-75-8 478262-76-9 478262-77-0  
478262-78-1 478262-79-2 478262-80-5  
(org. **electroluminescent** elements using mixed  
fluorescent and phosphorescent materials and displays employing  
them)

=> d 137 1-21 cbib abs hitstr hitind

L37 ANSWER 1 OF 21 HCA COPYRIGHT 2005 ACS on STN

142:381895 Composition for manufacture of organic  
**electroluminescent** devices and the devices. Ogata,  
Tomoyuki; Soma, Minoru; Iida, Koichiro (Mitsubishi Chemical Corp.,  
Japan). Jpn. Kokai Tokkyo Koho JP 2005093428 A2 20050407, 35 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2004-234438 20040811.  
PRIORITY: JP 2003-293426 20030814.

AB The claimed compn. contains solvents and functional compds., hole  
injection/transport materials and/or electron accepting compds., for  
formation of .gtoreq.1 of hole injection layers and/or .gtoreq.1 of  
hole transport layers in org. **electroluminescent** devices.  
In the compn., concns. of .gtoreq.1 compds. selected from (1) and  
(2) are .gtoreq.10 wt.%; (1) ether solvents and/or ester solvents;  
(2) solvents with H2O soly. .ltoreq.1 wt.% at 25.degree.. Also  
claimed are org. **electroluminescent** devices having  
.gtoreq.1 of hole injection layers and/or .gtoreq.1 of hole  
transport layers which are formed by wet coating of the compn. The  
functional compds. have high soly. to the solvents and the compn.  
has high affinity to under layers, so that uniform layers can be  
formed. The **electroluminescent** devices have high  
luminescent efficiency.

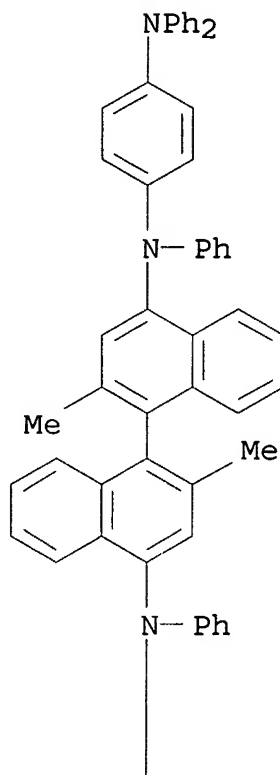
IT 640772-70-9

(compn. for formation of uniform hole injection/transport layer  
for org. **electroluminescent** device)

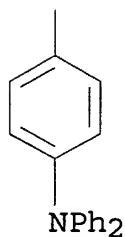
RN 640772-70-9 HCA

CN [1,1'-Binaphthalene]-4,4'-diamine, N,N'-bis[4-(diphenylamino)phenyl]-  
2,2'-dimethyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)

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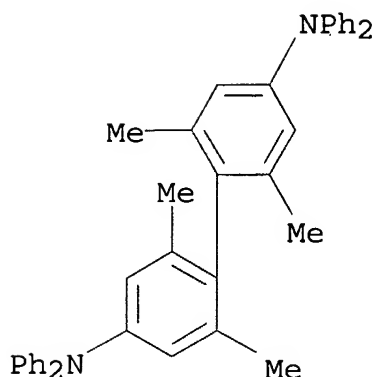


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IC ICM H05B033-22  
ICS H05B033-14  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)  
ST solvent hole injection layer compn **electroluminescent**

- device; wet coating solvent hole injection  
**electroluminescent** device; hole transport layer compn  
**electroluminescent** device
- IT **Electroluminescent** devices  
Solvents  
(compn. for formation of uniform hole injection/transport layer  
for org. **electroluminescent** device)
- IT 1109-15-5, Tris(pentafluorophenyl)borane 533935-00-1  
**640772-70-9**  
(compn. for formation of uniform hole injection/transport layer  
for org. **electroluminescent** device)
- IT 93-89-0, Ethyl benzoate 100-66-3, Anisol, uses 6192-44-5,  
2-Phenoxyethyl acetate  
(compn. for formation of uniform hole injection/transport layer  
for org. **electroluminescent** device)
- L37 ANSWER 2 OF 21 HCA COPYRIGHT 2005 ACS on STN
- 141:115225 Improvements in and relating to organic semiconducting  
materials. Veres, Janos; Brookes, Paul Craig; Williams, Richard  
Thomas; Ogier, Simon Dominic; Mohialdin-Khaffaf, Soad; Leeming,  
Stephen William (Avecia Limited, UK). PCT Int. Appl. WO 2004057688  
A1 20040708, 31 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK,  
DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN,  
IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,  
SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN,  
YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK,  
ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN,  
TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-GB5521  
20031218. PRIORITY: GB 2002-29660 20021220; GB 2003-10588 20030508.
- AB A compn. for use as an org. semiconducting (OSC) material, the  
compn. comprising: (i) at least one higher mol. wt. org.  
semiconducting compd. having a no. av. mol. wt. (Mn) of at least  
5000, and (ii) at least one lower mol. wt. org. semiconducting  
compd. having a no. av. mol. wt. (Mn) of .ltoreq.1000. Use of the  
compn. in an electronic device, e.g. FET or OLED.
- IT **719995-97-8**  
(improvements in org. semiconducting materials for electronic and  
electrooptical device applications)
- RN 719995-97-8 HCA
- CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N,N,N',N'-  
tetraphenyl- (9CI) (CA INDEX NAME)



IC ICM H01L051-30

CC 76-3 (Electric Phenomena)

Section cross-reference(s): 22, 25, 36

IT Capacitors

**Electroluminescent devices**

Electrophotography

Field effect transistors

Memory devices

Photoelectric devices

Semiconductor devices

Sensors

(improvements in org. semiconducting materials for electronic and electrooptical device applications)

IT 15546-43-7 20441-06-9 65181-78-4 76185-65-4 106614-56-6  
107001-70-7 122738-25-4 132571-80-3 132571-92-7 139255-17-7  
190974-18-6 313996-10-0 **719995-97-8** 719995-98-9  
719995-99-0

(improvements in org. semiconducting materials for electronic and electrooptical device applications)

L37 ANSWER 3 OF 21 HCA COPYRIGHT 2005 ACS on STN

141:14264 Organic **electroluminescent** devices with good heat resistance, long service life, and high luminance at low drive voltage. Soma, Minoru; Iida, Koichiro; Ogata, Tomoyuki; Sato, Yoshiharu (Mitsubishi Chemical Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2004158216 A2 20040603, 47 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-320194 20021101.

AB The devices have, between emitting layers and anodes, wet-formed layers contg. hole-transporting substances (e.g., arom. amines, phthalocyanines, porphyrins) of mol. wt. <2000 and electron acceptors represented by Ar1Ar2Ar3B (Ar1-Ar3 = arom. hydrocarbonyl, arom. heterocycle).

IT **640772-70-9**

(hole-injecting layers; long-life org. LED contg.)

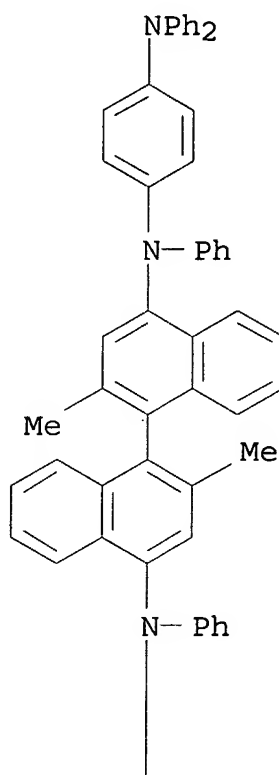


low-mol.-wt. arom. amines and arylboranes in hole-injecting layers)

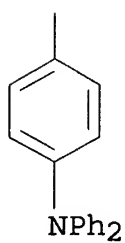
RN 640772-70-9 HCA

CN [1,1'-Binaphthalene]-4,4'-diamine, N,N'-bis[4-(diphenylamino)phenyl]-2,2'-dimethyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)

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IC ICM H05B033-22  
ICS C09K011-06; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device arylborane electron acceptor heat resistance; perfluorotriphenylborane binaphthylamine hole injecting layer LED

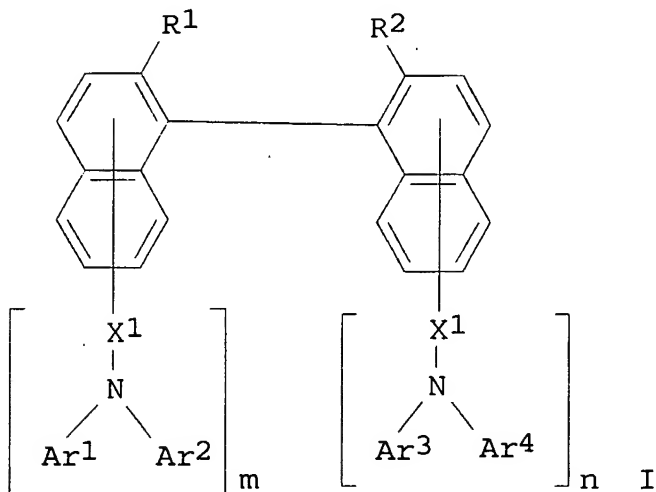
IT **Electroluminescent** devices  
(org; long-life org. **LED** contg. low-mol.-wt. arom. amines and arylboranes in hole-injecting layers)

IT 1109-15-5 **640772-70-9**  
(hole-injecting layers; long-life org. **LED** contg. low-mol.-wt. arom. amines and arylboranes in hole-injecting layers)

L37 ANSWER 4 OF 21 HCA COPYRIGHT 2005 ACS on STN

140:84411 Organic **electroluminescent** devices containing 2,2'-substituted binaphthyl derivatives. Takeuchi, Masako; Iida, Koichiro; Sato, Yoshiharu (Mitsubishi Chemical Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2004014187 A2 20040115, 45 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-163156 20020604.

GI



AB The devices, showing low threshold voltage and good performance stability at high temp. regions, contain binaphthyl derivs. I [Ar1-Ar4 = 5-6-membered (condensed) arom. (hetero)cycle; m, n = 0-4; m + n.gto req.1; X1, X2 = single bond, bivalent bridging group; R1, R2 = halo, OH, alkyl(oxy), alkenyl, alkoxy carbonyl] in constituent layers. Improved hole injection/transport efficiency with excellent heat resistance are achieved with the binaphthyl derivs.

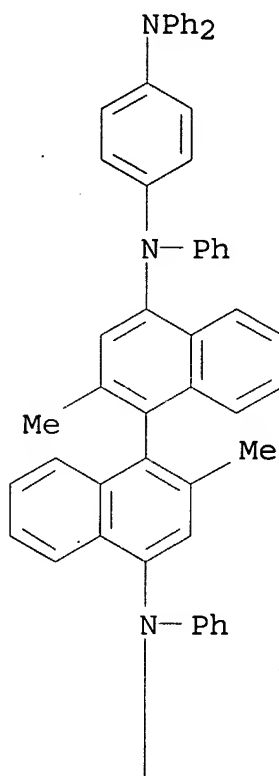
IT **640772-70-9P**

(hole-transporting layers; low-threshold org. LED  
contg. 2,2'-substituted binaphthyl derivs. in hole transport  
layers)

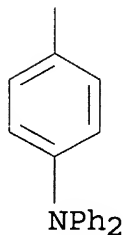
RN 640772-70-9 HCA

CN [1,1'-Binaphthalene]-4,4'-diamine, N,N'-bis[4-(diphenylamino)phenyl]-  
2,2'-dimethyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)

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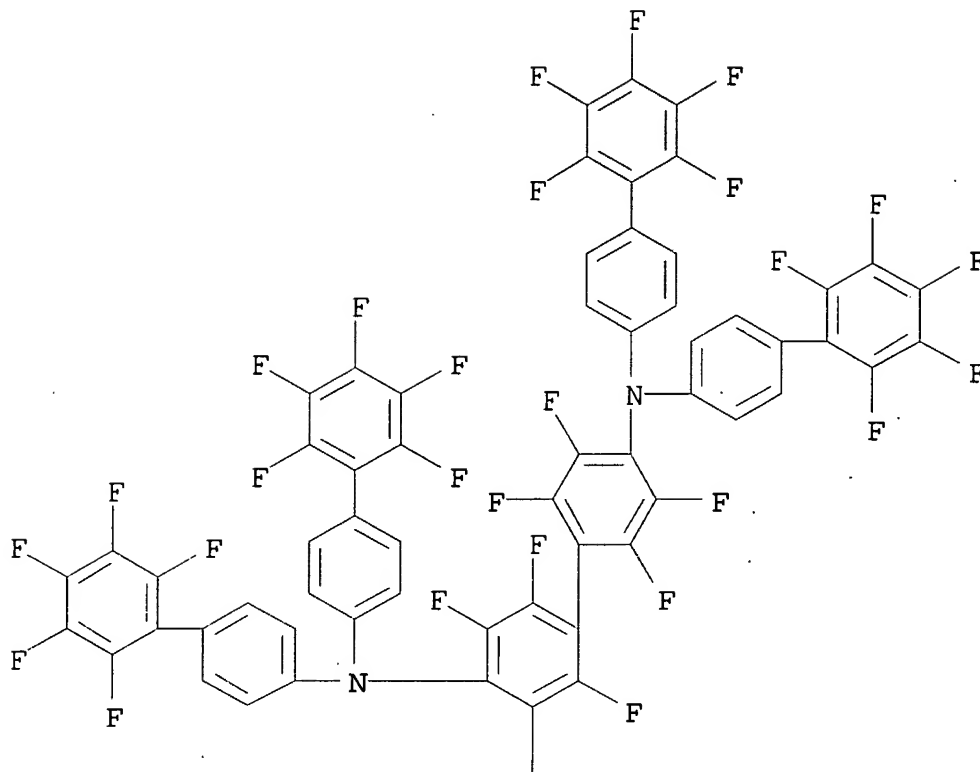


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- ICS C09K011-06; H05B033-14; C07C211-57
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25
- ST **electroluminescent** device binaphthyl hole transport efficiency; high temp performance stability binaphthyl LED
- IT Hole transport  
(low-threshold org. **LED** contg. 2,2'-substituted binaphthyl derivs. in hole transport layers)
- IT **Electroluminescent** devices  
(org.; low-threshold org. **LED** contg. 2,2'-substituted binaphthyl derivs. in hole transport layers)
- IT **640772-70-9P**  
(hole-transporting layers; low-threshold org. **LED** contg. 2,2'-substituted binaphthyl derivs. in hole transport layers)
- IT 19606-98-5 640772-71-0  
(low-threshold org. **LED** contg. 2,2'-substituted binaphthyl derivs. in hole transport layers)
- L37 ANSWER 5 OF 21 HCA COPYRIGHT 2005 ACS on STN
- 139:371610 Organic **electroluminescent** materials and devices, having high luminescent efficiency and color purity. Funabashi, Masakazu; Iwakuma, Toshihiro; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003313547 A2 **20031106**, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-116935 20020419.
- AB The materials are Ar1(NAr4Ar6)n(NAr5Ar7)mNAr2Ar3 [n= 1-3; m = 0-2; Ar1-Ar3, Ar6, Ar7 = 1,2-, 1,3-, or 1,4-(perfluoro)phenyl (structures given); .gtoreq.1 of Ar1-Ar3, Ar6, Ar7 = perfluorophenyl; Ar4, Ar5 = 1,2-, 1,3-, or 1,4-(perfluoro)phenylene (structures given); Ar4 and/or Ar5 = perfluorophenylene]. The devices, preferably blue-emitting, contain the materials as host materials in emitter layers and are useful as light sources for elec. app.
- IT **620607-87-6P**  
(fluorophenylamines as host materials in emitter layers in org. **electroluminescent** devices)
- RN 620607-87-6 HCA
- CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',5,5',6,6'-octafluoro-N,N,N',N'-tetrakis(2',3',4',5',6'-pentafluoro[1,1'-biphenyl]-4-yl)-(9CI) (CA INDEX NAME)

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|  
F

- IC ICM C09K011-06  
ICS C07C211-56; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST fluorophenylamine host emitter org **electroluminescent** material; light source perfluorophenylene org **electroluminescent** device
- IT **Electroluminescent** devices  
(blue-emitting, org.; fluorophenylamines as host materials in emitter layers in org. **electroluminescent** devices)
- IT Luminescent substances  
(**electroluminescent**; fluorophenylamines as host materials in emitter layers in org. **electroluminescent**

devices)

IT **Electroluminescent** devices

(org.; fluorophenylamines as host materials in emitter layers in org. **electroluminescent** devices)

IT 620607-81-0P 620607-84-3P 620607-86-5P **620607-87-6P**

(fluorophenylamines as host materials in emitter layers in org. **electroluminescent** devices)

IT 1535-92-8P 25506-45-0P 620607-80-9P 620607-82-1P  
620607-83-2P 620607-85-4P

(fluorophenylamines as host materials in emitter layers in org. **electroluminescent** devices)

IT 62-53-3, Aniline, reactions 100-46-9, Benzylamine, reactions  
106-50-3, 1,4-Phenylenediamine, reactions 344-03-6,  
1,4-Dibromotetrafluorobenzene 344-04-7, Bromopentafluorobenzene  
771-60-8, Pentafluoroaniline 827-15-6, Iodopentafluorobenzene  
1038-65-9 1038-66-0, 4,4'-Diaminooctafluorobiphenyl 5467-74-3,  
4-Bromophenylboric acid

(fluorophenylamines as host materials in emitter layers in org. **electroluminescent** devices)

L37 ANSWER 6 OF 21 HCA COPYRIGHT 2005 ACS on STN

139:267945 Electrophotographic photoreceptor with suppressed degradation by leak light and its printer. Azuma, Jun (Kyocera Mita Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003270821 A2 **20030925**, 41 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-71419 20020315.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The electrophotog. photoreceptor has on a support a photosensitive layer involving a photoconductive layer contg. charge-generating agents and charge-transporting agents in the same layer, wherein spectroscopic property of the charge-transporting agents are defined in optimized region to suppress photodegrdn. of photoconductor by leak light of flash exposure. The optimized region is a half value wavelength region of absorption peak in visible region in the wavelength of flash **light emitted** from a flash fusing means, excluding the wavelength for exposure, i.e., the intensity being .gtoreq.1/2-fold the max. intensity of flash light. Preferably, the charge-generating agents comprise metal-contg. or not contg. phthalocyanines and the charge-transporting agents are selected from quinones or ketones represented by general formula I-VI [R1-R22 = H, halo, (halogenated) alkoxy, (halogenated) aryl, NO2, CN; Ar = arom. hydrocarbon, condensed polycyclic hydrocarbon;

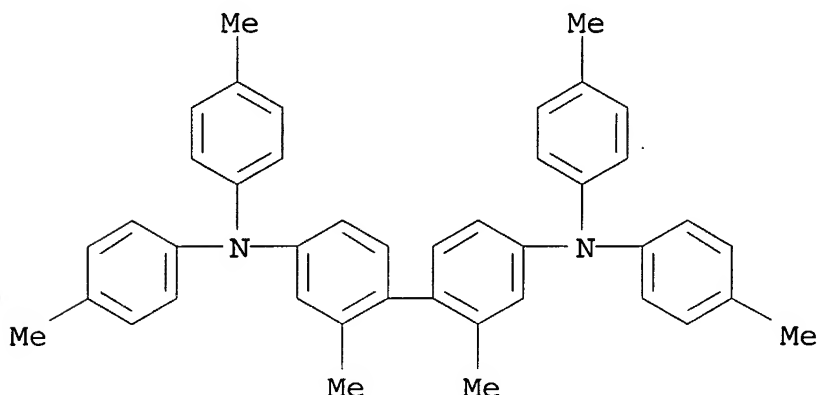
a-k, p = 1-4 integer; m, n = 1, 2].

IT 80731-00-6

(hole-transporting agent; electrophotog. photoreceptor with suppressed degrdn. by leak light and its printer)

RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM G03G005-06

ICS G03G005-04; G03G015-04; G03G015-043; G03G015-20

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 494-72-4D, derivs. 3457-53-2D, derivs. 80731-00-6

254897-50-2 258354-41-5D, derivs. 603139-03-3D, derivs.

(hole-transporting agent; electrophotog. photoreceptor with suppressed degrdn. by leak light and its printer)

L37 ANSWER 7 OF 21 HCA COPYRIGHT 2005 ACS on STN

139:101841 Process for production of high-molecular compounds useful for polymer LED or the like. Noguchi, Takanobu; Tsubata, Yoshiaki; Doi, Shuji (Sumitomo Chemical Company, Limited, Japan). PCT Int. Appl.

WO 2003057762 A1 20030717, 71 pp. DESIGNATED STATES: W:

AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP13567 20021226. PRIORITY: JP 2001-398871 20011228.

AB A process for prodn. of high-mol. compds. is disclosed, characterized by comprising the steps of: (A) polymg. one or more monomers X1-Ar-X2 (X1, X2 = reactive groups which can react with

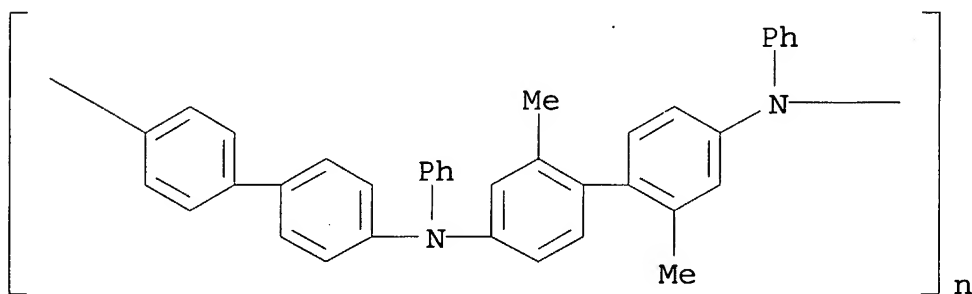
each other to form a bond; Ar = arylene, divalent heterocyclic group, divalent arom. amine group; provided that Ar bears at least one Y reactive group substantially inert to X1 and X2), and (B) reacting the Y-bearing polymer with a compd. having a Z reactive group which can react with the Y reactive group to form a bond. Thus, adding bis(1,5-cyclooctadiene)nickel(0) complex 4.0 to a mixt. of the phosphonate ester derived from 2,5-dibromo-3-(bromomethyl)benzene and tri-Et phosphite, 0.29, 1,4-dibromo-2-methoxy-5-isoamyloxybenzene 1.9 and 2,2'-bipyridyl 2.2 g in 160 mL THF and mixing at 60.degree. for 3 h then working up gave a polymer bearing isoamyl ether group and phosphonate ester group. Mixing 0.2 g the polymer with 0.1 g 4-n-hexyloxybenzaldehyde, adding THF (50 mL), combining with a soln. of 0.1 g K tert-butoxide in THF (5 mL) and reacting at room temp. for 2 h gave a modified polymer with Mw 8.0x10<sup>4</sup> and Mn 3.2x10<sup>4</sup>. A test piece from the polymer showed fluorescent peak at 422 nm and fluorescent intensity of 1.5.

IT 201026-17-7P

(process for prodn. of high-mol. polyphenyl compds. useful for polymer LED or the like)

RN 201026-17-7 HCA

CN Poly[(phenylimino) (2,2'-dimethyl [1,1'-biphenyl]-4,4'-diyl) (phenylimino) [1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



IC ICM C08G085-00

ICS H05B033-14; C09K011-06

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 73, 76

ST phosphonate isoamyloxybenzene polymer hexyloxybenzaldehyde adduct  
manuf **electroluminescent** device

IT **Electroluminescent** devices

Fluorescent substances

(process for prodn. of high-mol. polyphenyl compds. useful for polymer LED or the like)

IT Polyphenyls

(process for prodn. of high-mol. polyphenyl compds. useful for polymer LED or the like)

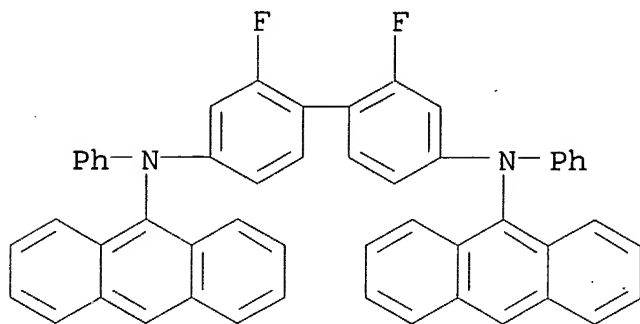


- IT 561066-58-8DP, 1,4-Dibromo-2-methoxy-5-isoamyloxybenzene-diethyl 2,5-dibromobenzylphosphonate copolymer, reaction products with hexyloxybenzaldehyde  
(process for prodn. of high-mol. compds. useful for polymer LED or the like)
- IT 5736-94-7DP, 4-n-Hexyloxybenzaldehyde, reaction products with functional group-contg. polyphenylenes 118578-89-5DP, Diethyl 4-tert-butylbenzylphosphonate, reaction products with functional group-contg. polyphenylenes 201802-67-7DP, reaction products with bromine-contg. functional polyphenylenes 561066-59-9DP, reaction products with phosphonate esters 561066-60-2DP, reaction products with functional group-contg. polyphenylenes 561066-62-4P 561066-63-5DP, reaction products with phosphonate esters and other modifiers 561066-64-6DP, reaction products with aldehyde group-contg. polyphenylenes 561066-65-7DP, reaction products with functional group-contg. polyphenylenes  
(process for prodn. of high-mol. polyphenyl compds. useful for polymer LED or the like)
- IT 201026-17-7P 561066-61-3DP, phosphonato group-terminated  
(process for prodn. of high-mol. polyphenyl compds. useful for polymer LED or the like)
- L37 ANSWER 8 OF 21 HCA COPYRIGHT 2005 ACS on STN
- 138:376535 Organic **electroluminescent** display having red **light-emitting** layer. Oh, Hyoung Yun; Lee, Sung Koo; Park, Chung Gun; Seo, Jeong Dea; Kim, Myung Seop (LG Electronics Co., Ltd., S. Korea). Jpn. Kokai Tokkyo Koho JP 2003142269 A2 20030516, 31 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-293373 20021007. PRIORITY: KR 2001-67267 20011030.
- AB The display has a red **light-emitting** layer between electrodes, and the layer contains a guest substance of red-emitting substance and .gtoreq.2 host substances. Preferably, one of the host substances is a (substituted) quinoline deriv. or a compd. represented by (L1L2N)m-z-(NL3L4)n [m + n = 1-8; z = A1, A2QA3; A1 = (substituted) arom. hydrocarbylene, heterocyclic group, aliph. hydrocarbylene; A2-3 = (substituted) arom. hydrocarbylene, heterocyclic group,; A1-3 are connected to N via aliph. hydrocarbylene, amido, or imine; Q = (substituted) arom. hydrocarbylene, heterocyclic ring, aliph. hydrocarbylene, Group IIIA, IVA, VA, or VIA element; Q is connected to A2-3 via (substituted) aliph. hydrocarbylene, Group IIIA, IVA, VA, or VIA element, amido, ester, carbonyl, azo, imine; L1-4 = (substituted) arom. hydrocarbyl, heterocyclic group, aliph. hydrocarbyl; silyl, H]. The display **emits** red **light** with high luminescent efficiency.
- IT 522652-95-5 522652-98-8  
(host; org. **electroluminescent** display having red **light-emitting** layer contg. host substances for

high luminescent efficiency)

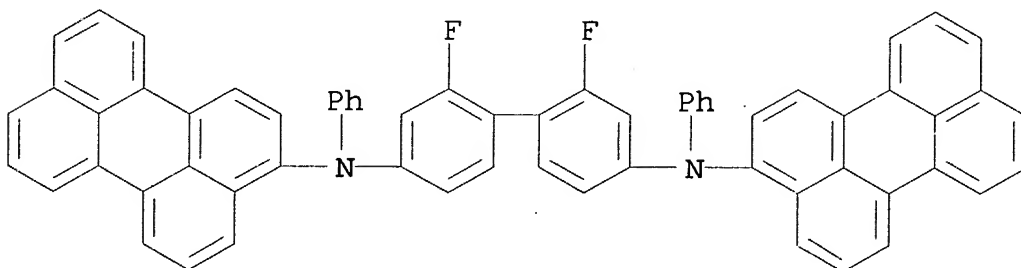
RN 522652-95-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-di-9-anthracenyl-2,2'-difluoro-N,N'-diphenyl- (9CI) (CA INDEX NAME)



RN 522652-98-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-difluoro-N,N'-di-3-perylenyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST org **electroluminescent** display red **light emitting** substance; host guest red emitting substance  
**electroluminescent** display

IT **Electroluminescent** devices  
(displays; org. **electroluminescent** display having red **light-emitting** layer contg. host substances for high luminescent efficiency)

IT **Luminescent** screens  
(**electroluminescent**; org. **electroluminescent** display having red **light-emitting** layer contg. host substances for high luminescent efficiency)

IT **Luminescent** substances

(org. electroluminescent display having red  
light-emitting layer contg. host substances for  
high luminescent efficiency)

IT 91-64-5D, Coumarin, derivs. 226-05-1D, 7H-Benzo[c]thioxanthene,  
derivs. 7385-67-3D, Nile red, derivs. 13558-31-1D, derivs.  
51325-91-8D, DCM, derivs. 54300-60-6D, Pyrromethene, derivs.  
200052-70-6

(guest; org. electroluminescent display having red  
light-emitting layer contg. host substances for  
high luminescent efficiency)

IT 2085-33-8, Alq3 13978-85-3 25387-93-3 62556-02-9 67952-28-7,  
Magnesium 8-hydroxyquinolate 127697-06-7 127697-08-9  
138685-19-5 139255-20-2 177799-11-0 177799-16-5 220721-66-4  
220721-68-6 223735-42-0 223735-62-4 227013-26-5 252755-19-4  
253867-48-0 340162-05-2 473717-08-7 522652-78-4 522652-79-5  
522652-80-8 522652-81-9 522652-82-0 522652-83-1 522652-84-2  
522652-85-3 522652-86-4 522652-87-5 522652-88-6 522652-89-7  
522652-90-0 522652-91-1 522652-92-2 522652-93-3 522652-94-4  
522652-95-5 522652-96-6 522652-98-8  
522652-99-9 522653-00-5 522653-01-6 522653-02-7 522653-03-8  
522653-04-9 522653-05-0 522653-06-1 522653-07-2 522653-08-3  
522653-09-4 522653-10-7 522653-11-8 522653-12-9 522653-13-0  
522653-14-1 522653-15-2 522653-16-3 522653-17-4 522653-18-5  
522653-19-6 522653-20-9 522653-21-0 522653-22-1

(host; org. electroluminescent display having red  
light-emitting layer contg. host substances for  
high luminescent efficiency)

IT 177799-14-3P 227009-35-0P 522652-77-3P 522652-97-7P

(host; org. electroluminescent display having red  
light-emitting layer contg. host substances for  
high luminescent efficiency)

IT 23683-68-3P 36809-26-4P 201802-67-7P

(org. electroluminescent display having red  
light-emitting layer contg. host substances for  
high luminescent efficiency)

IT 90-30-2, N-Phenyl-1-naphthylamine 106-40-1, p-Bromoaniline  
121-43-7, Trimethylborate 122-39-4, Diphenylamine, reactions  
198-55-0, Perylene 523-27-3, 9,10-Dibromoanthracene 591-50-4,  
Iodobenzene 4181-05-9, 4-Diphenylaminobenzaldehyde 57191-89-6

(org. electroluminescent display having red  
light-emitting layer contg. host substances for  
high luminescent efficiency)

L37 ANSWER 9 OF 21 HCA COPYRIGHT 2005 ACS on STN

138:245293 Organic electroluminescent devices and displays.

Oshiyama, Tomohiro; Yamada, Taketoshi; Suzurizato, Yoshiyuki; Kita,  
Hiroshi (Konica Co., Japan). Jpn. Kokai Tokyo Koho JP 2003077680  
A2 20030314, 32 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 2001-270180 20010906.

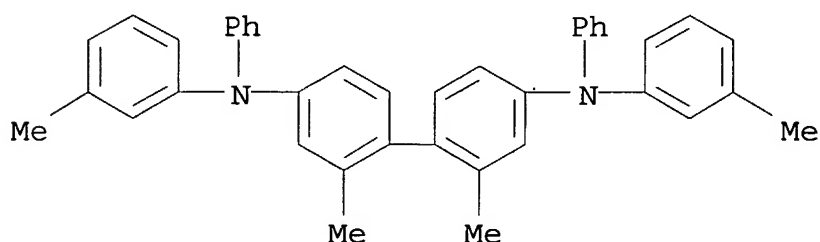
AB The devices comprise: a fluorescent layer; a glass substrate ( $n = n_1$ ); an undercoating layer ( $n = n$ ); an ITO layer ( $n = n_2$ ); and a hole transport, a phosphor, an electron transport and a Ag electrode, where  $n_1 < n < n_2$ .

IT 65181-79-5

(org. **electroluminescent** devices and displays)

RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-22

ICS G09F009-30; H05B033-02; H05B033-12; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device display

IT Electrodes

Glass substrates

**Luminescence**

Refractive index

(org. **electroluminescent** devices and displays)

IT Polycarbonates, uses

(org. **electroluminescent** devices and displays)

IT 147-14-8, Copper phthalocyanine 1314-23-4, Zirconium oxide (ZrO<sub>2</sub>), uses 1314-61-0, Tantalum oxide (Ta<sub>2</sub>O<sub>5</sub>) 2085-33-8, Tris(8-quinolinolato)aluminum 7783-40-6, Magnesium fluoride (MgF<sub>2</sub>) 9002-86-2, PVC 9011-14-7, PMMA 13463-67-7, Titanium oxide (TiO<sub>2</sub>), uses 18282-10-5, Tin oxide (SnO<sub>2</sub>) 24842-83-9 33724-38-8 50926-11-9, ITO 65181-78-4, TPD 65181-79-5 73741-22-7 73741-28-3 76125-60-5, Aluminum strontium oxide (Al<sub>14</sub>Sr<sub>4</sub>O<sub>25</sub>) 142289-08-5, DPVBi 205195-38-6 405171-87-1 405173-85-5

(org. **electroluminescent** devices and displays)

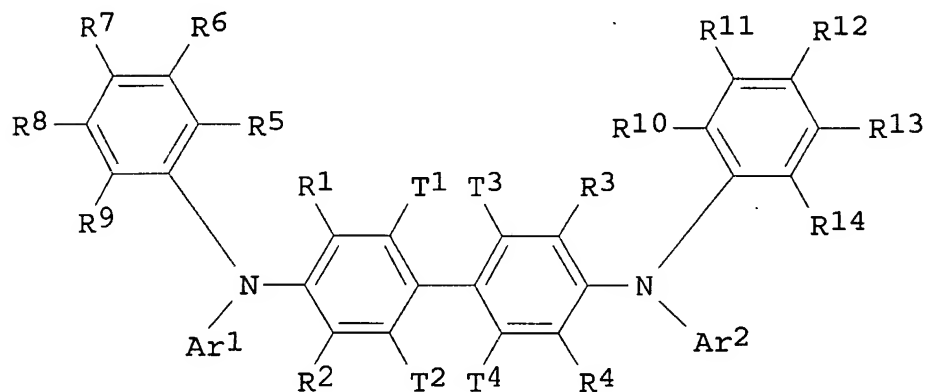
IT 16910-54-6, Europium(2+), uses

(org. **electroluminescent** devices and displays)

L37 ANSWER 10 OF 21 HCA COPYRIGHT 2005 ACS on STN  
138:160804 Bisphenyldiamine derivatives and organic

**electroluminescent** devices using them. Okubo, Yasushi; Oshiyama, Tomohiro; Kita, Hiroshi (Konica Co., Japan). Jpn. Kokai Tokkyo Koho JP 2003040844 A2 **20030213**, 38 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-229392 20010730.

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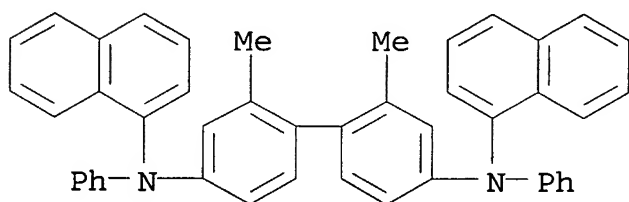
AB The invention relates to an org. **electroluminescent** device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 compds. I [.gtoreq.1 of T1-4 is substituents; R1-14 = H or substituent; Ar1-2 = (un)substituted arom. ring; .gtoreq.1 of Ar1-2 is 1-naphthyl, 2-naphthyl, 1-anthryl, 9-anthryl, 1-pyrenyl, 2-pyrenyl or arom. heterocyclyl].

IT **495416-60-9 495416-61-0 495416-62-1**  
**495416-63-2 495416-64-3 495416-65-4**  
**495416-66-5**

(novel bisphenyldiamine derivs. for org.  
**electroluminescent** devices)

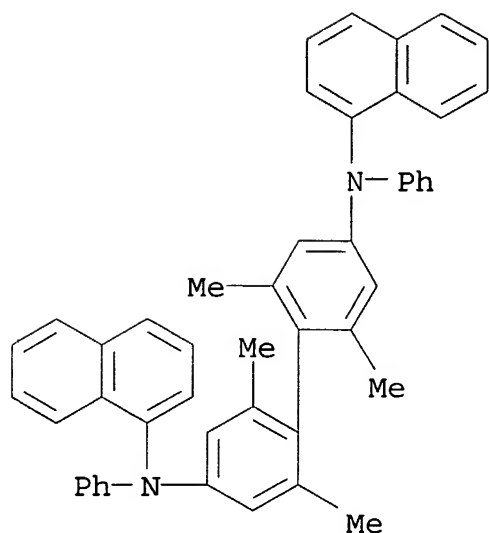
RN 495416-60-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-di-1-naphthalenyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)



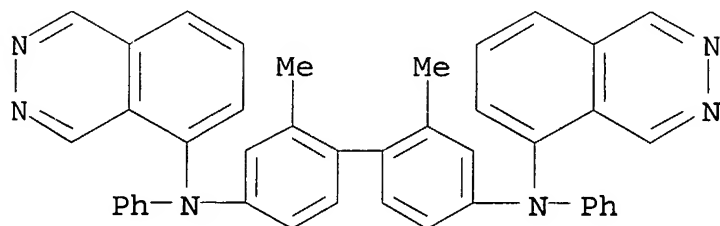
RN 495416-61-0 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N,N'-di-1-naphthalenyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)



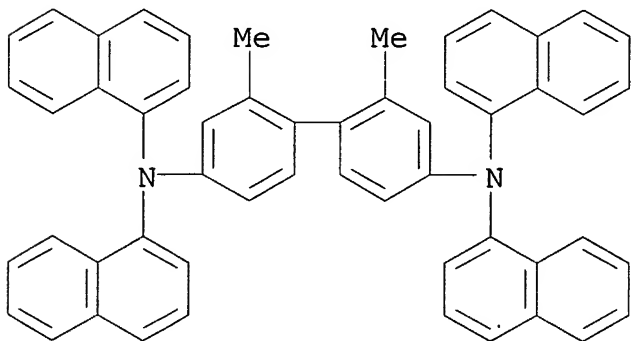
RN 495416-62-1 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-diphenyl-N,N'-di-5-phthalazinyl- (9CI) (CA INDEX NAME)



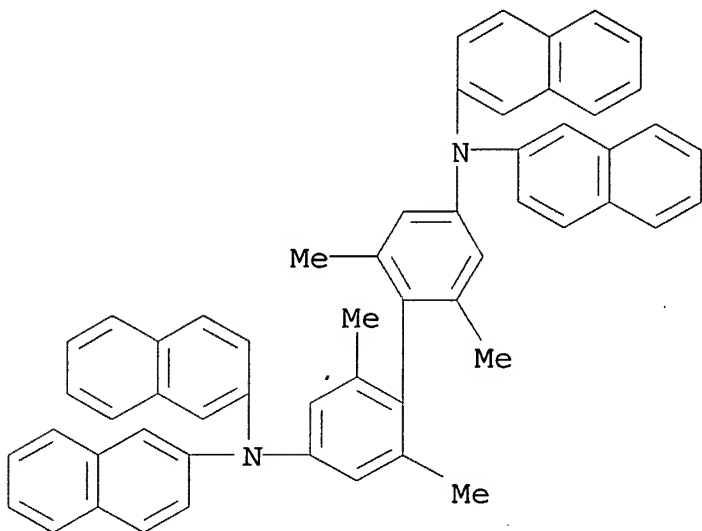
RN 495416-63-2 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetra-1-naphthalenyl- (9CI) (CA INDEX NAME)



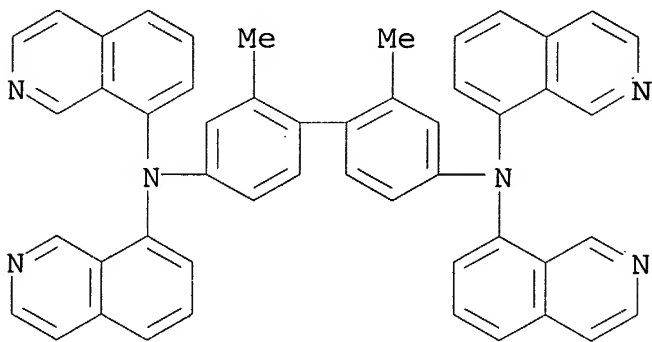
RN 495416-64-3 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N,N,N',N'-tetra-2-naphthalenyl- (9CI) (CA INDEX NAME)



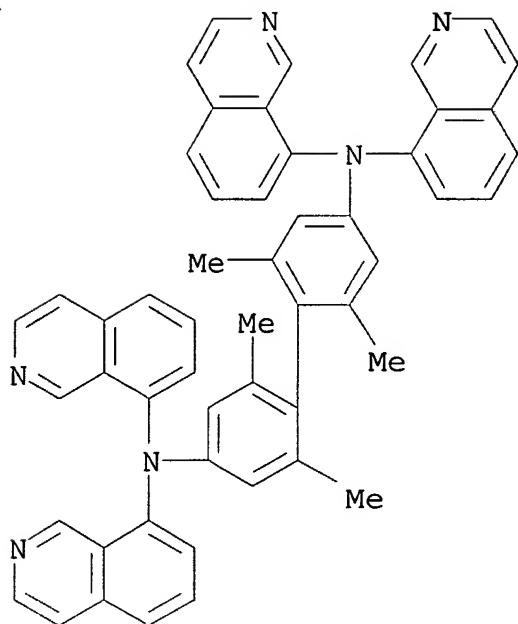
RN 495416-65-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'-tetra-8-isoquinolinyl-2,2'-dimethyl- (9CI) (CA INDEX NAME)



RN 495416-66-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'-tetra-8-isoquinolinyl-2,2',6,6'-tetramethyl- (9CI) (CA INDEX NAME)



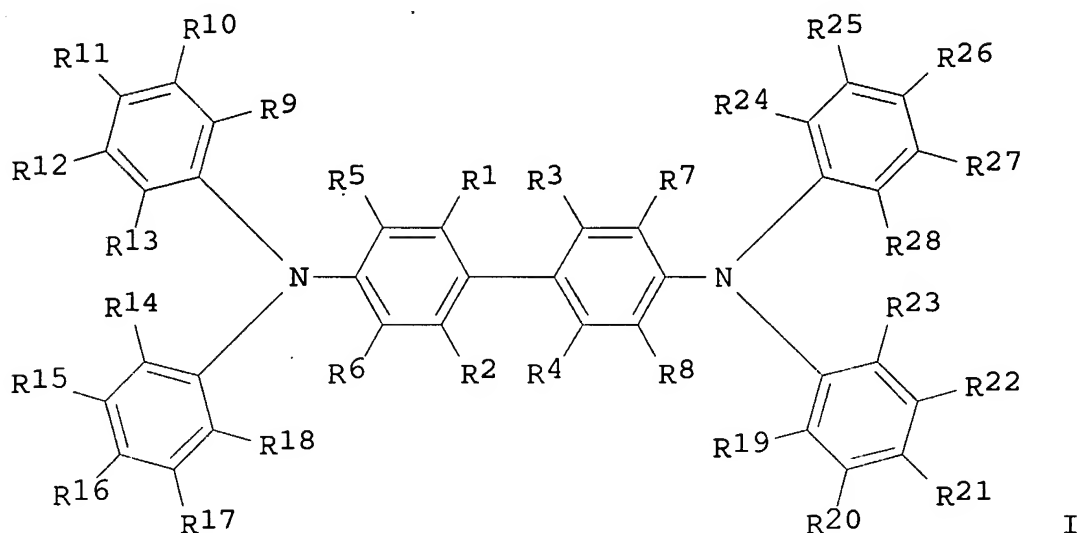
IC ICM C07C211-57  
 ICS C07C211-61; C07D217-02; C07D237-30; C09K011-06; H05B033-12;  
 H05B033-14; H05B033-22  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 25  
 ST **electroluminescent** device bisphenyldiamine deriv  
 IT **Electroluminescent** devices  
 (novel bisphenyldiamine derivs. for)  
 IT 86-73-7, 9H-Fluorene 90-11-9 90-30-2 99-12-7 612-55-5  
 4746-77-4 16433-88-8 22409-76-3 31458-17-0 60410-99-3  
 142068-90-4  
 (novel bisphenyldiamine derivs. for org.  
**electroluminescent** devices)  
 IT 4733-39-5 12159-91-0D, Germanium magnesium fluoride oxide  
 (Ge<sub>2</sub>Mg<sub>8</sub>F<sub>20</sub>11), Mn-doped 273381-61-6 405171-87-1 405173-85-5  
 495416-60-9 495416-61-0 495416-62-1  
 495416-63-2 495416-64-3 495416-65-4  
 495416-66-5  
 (novel bisphenyldiamine derivs. for org.  
**electroluminescent** devices)

L37 ANSWER 11 OF 21 HCA COPYRIGHT 2005 ACS on STN  
 138:46995 Aryl benzidine derivative compound, organic  
**electroluminescent** material, and organic  
**electroluminescent** element. Oshiyama, Tomohiro; Okubo,  
 Yasushi; Yamada, Taketoshi; Kita, Hiroshi (Konica Co., Japan). Jpn.



Kokai Tokkyo Koho JP 2002356462 A2 20021213, 46 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-291115 20010925.  
 PRIORITY: JP 2001-100080 20010330.

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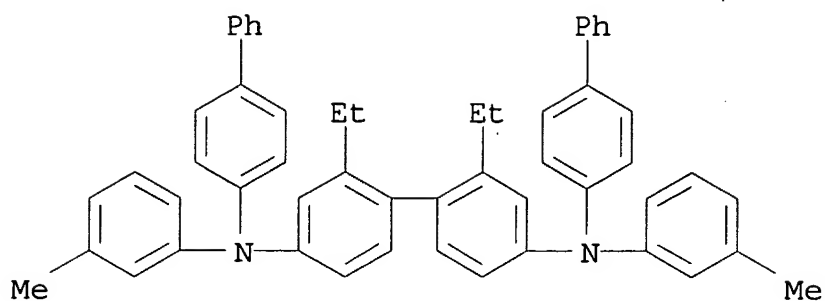


AB The invention refers to an org. **electroluminescent** device comprising a novel **org. luminescent** material I  
 [R1-28 = H, or substituent; at least one of R14-18 and at least one of R19-23 = (un)substituted phenyl; the sum of the steric parameters of R1-4, Es = -7 to -2.5].

IT 478370-40-0 478370-41-1 478370-44-4  
 478370-46-6 478370-47-7 478370-48-8  
 (aryl benzidine deriv. compd., org. **electroluminescent** material, and org. **electroluminescent** element)

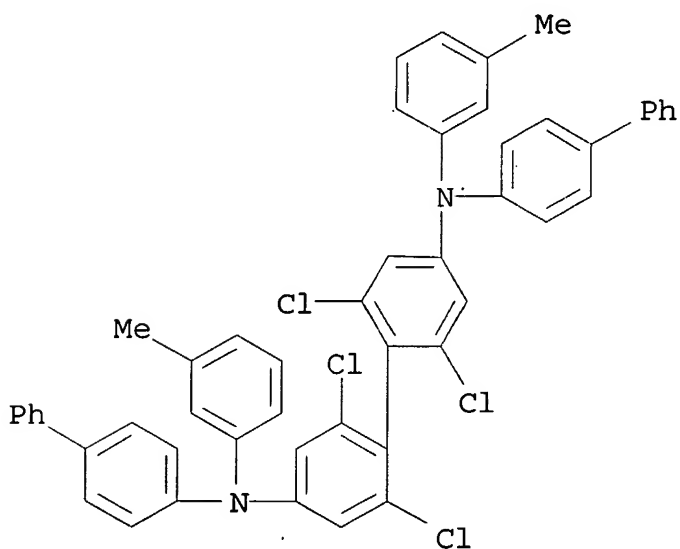
RN 478370-40-0 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-2,2'-diethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



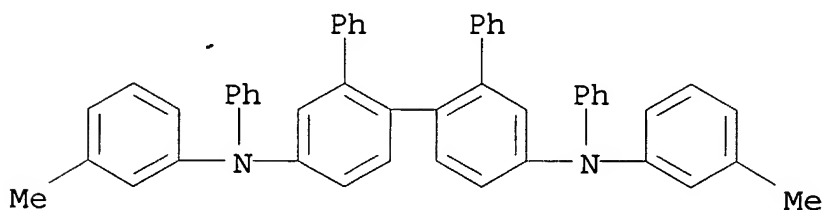
RN 478370-41-1 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-2,2',6,6'-tetrachloro-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



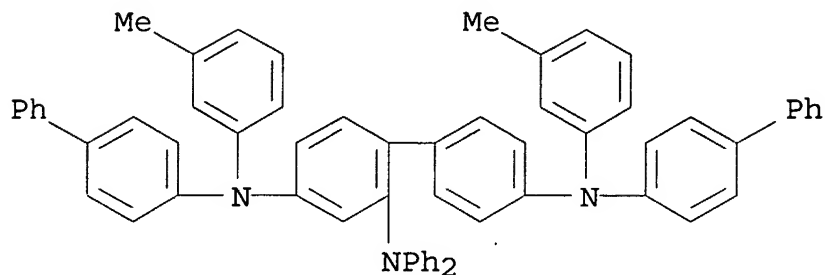
RN 478370-44-4 HCA

CN [1,1':2',1'':2'',1''':2''',1''''-Quaterphenyl]-4'',5'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



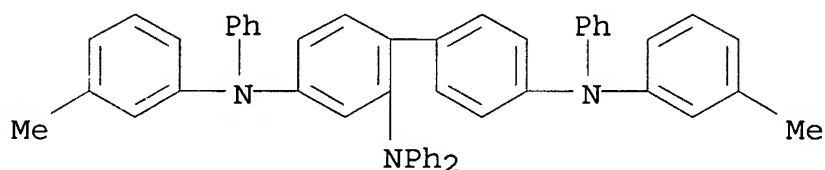
RN 478370-46-6 HCA

CN [1,1'-Biphenyl]-2,4,4'-triamine, N4,N4'-bis([1,1'-biphenyl]-4-yl)-N4,N4'-bis(3-methylphenyl)-N2,N2-diphenyl- (9CI) (CA INDEX NAME)



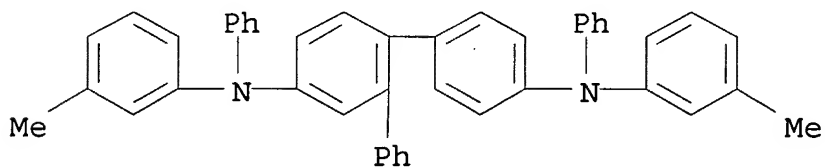
RN 478370-47-7 HCA

CN [1,1'-Biphenyl]-2,4,4'-triamine, N4,N4'-bis(3-methylphenyl)-N2,N2,N4,N4'-tetraphenyl- (9CI) (CA INDEX NAME)



RN 478370-48-8 HCA

CN [1,1':2',1''-Terphenyl]-4,4'-diamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



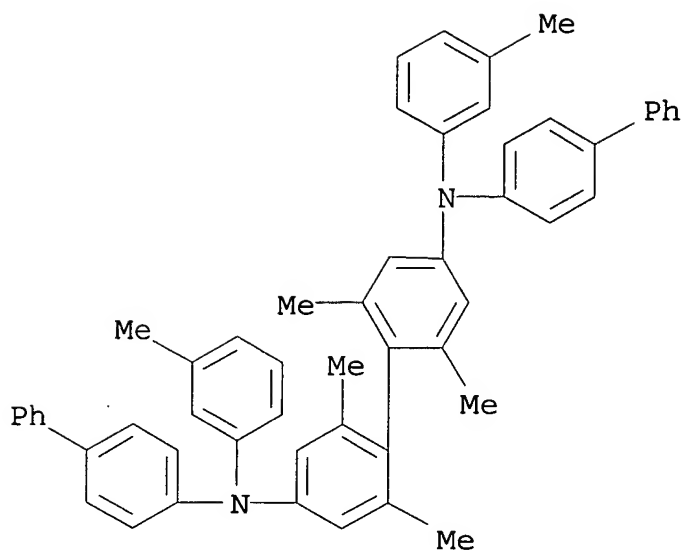
IT 478262-76-9P 478370-39-7P 478370-42-2P

478370-43-3P 478370-45-5P

(aryl benzidine deriv. compd., org. **electroluminescent** material, and org. **electroluminescent** element)

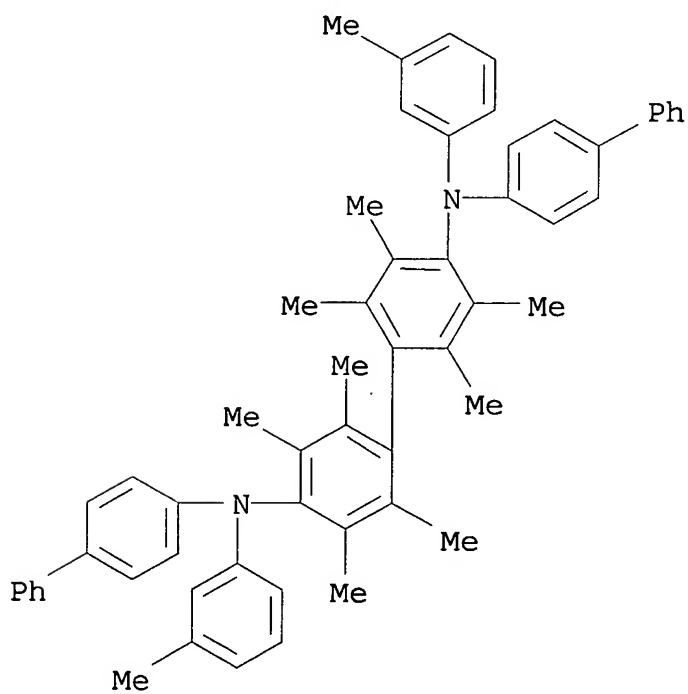
RN 478262-76-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-2,2',6,6'-tetramethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 478370-39-7 HCA

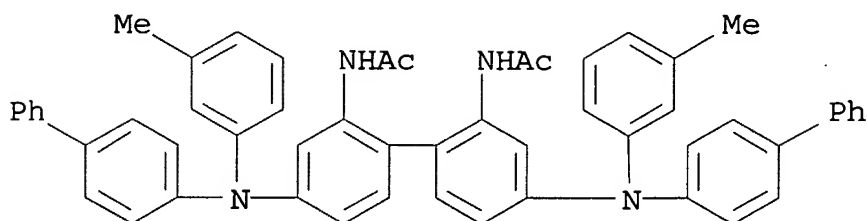
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-2,2',3,3',5,5',6,6'-octamethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 478370-42-2 HCA

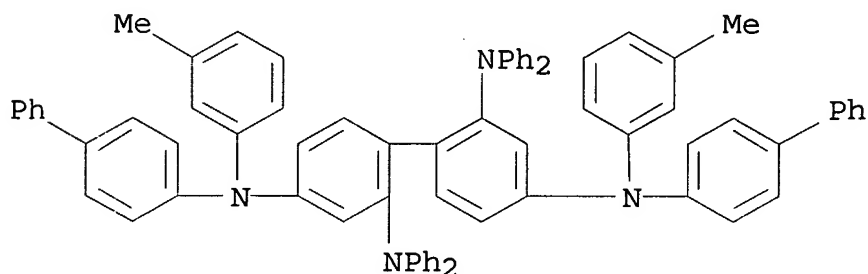
CN Acetamide, N,N'-[4,4'-bis([1,1'-biphenyl]-4-yl)]-N,N'-bis(3-methylphenyl)-2,2',3,3',5,5',6,6'-octamethyl-1,1'-biphenyl-4,4'-diamine

methylphenyl) amino] [1,1'-biphenyl]-2,2'-diyl]bis- (9CI) (CA INDEX NAME)



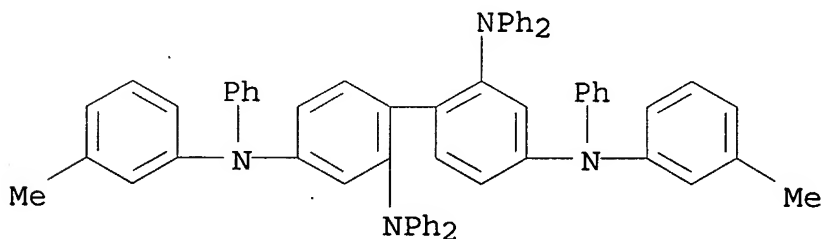
RN 478370-43-3 HCA

CN [1,1'-Biphenyl]-2,2',4,4'-tetramine, N4,N4'-bis([1,1'-biphenyl]-4-yl)-N4,N4'-bis(3-methylphenyl)-N2,N2,N2',N2'-tetraphenyl- (9CI) (CA INDEX NAME)



RN 478370-45-5 HCA

CN [1,1'-Biphenyl]-2,2',4,4'-tetramine, N4,N4'-bis(3-methylphenyl)-N2,N2,N2',N2',N4,N4'-hexaphenyl- (9CI) (CA INDEX NAME)



IC ICM C07C211-54

ICS C07C211-56; C07C217-80; C07C217-92; C07C229-60; C07C233-43; C09K011-06; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST aryl benzidine deriv **electroluminescent** device steric hindrance

IT **Electroluminescent** devices

Steric hindrance

(aryl benzidine deriv. compd., org. **electroluminescent** material, and org. **electroluminescent** element)

IT 478370-40-0 478370-41-1 478370-44-4

478370-46-6 478370-47-7 478370-48-8

(aryl benzidine deriv. compd., org. **electroluminescent** material, and org. **electroluminescent** element)

IT 478262-76-9P 478370-39-7P 478370-42-2P

478370-43-3P 478370-45-5P

(aryl benzidine deriv. compd., org. **electroluminescent** material, and org. **electroluminescent** element)

IT 92-66-0, 4-Bromo-biphenyl 99-12-7, 3,5-Dimethylnitrobenzene

108-44-1, m-Toluidine, reactions 591-50-4, Iodobenzene

1205-64-7, 3-Methyldiphenylamine 2100-25-6, Iododurene

3460-18-2, 2,5-Dibromonitrobenzene

(aryl benzidine deriv. compd., org. **electroluminescent** material, and org. **electroluminescent** element)

IT 3074-89-3P 3075-70-5P 4746-77-4P 22409-76-3P 91371-12-9P

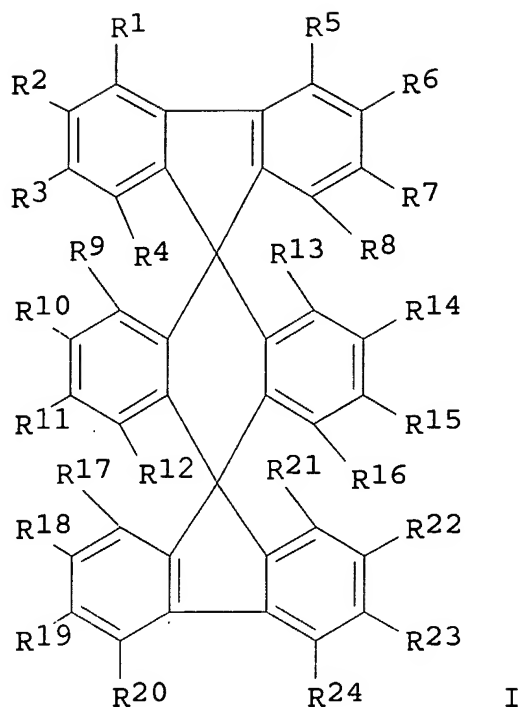
136630-36-9P 142068-90-4P 478370-49-9P 478370-50-2P

(aryl benzidine deriv. compd., org. **electroluminescent** material, and org. **electroluminescent** element)

L37 ANSWER 12 OF 21 HCA COPYRIGHT 2005 ACS on STN

137:360139 Double-spiro organic compounds and **electroluminescent** devices. Kim, Kong-Kyeum; Son, Se-Hwan; Yoon, Seok-Hee; Bae, Jae-Soon; Lee, Youn-Gu; Im, Sung-Gap; Kim, Ji-Eun; Lee, Jae-Chol (LG Chem, Ltd., S. Korea). PCT Int. Appl. WO 2002088274 A1 20021107, 117 pp. DESIGNATED STATES: W: CN, JP; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-KR458 20020318. PRIORITY: KR 2001-23039 20010427; KR 2001-23038 20010427.

GI

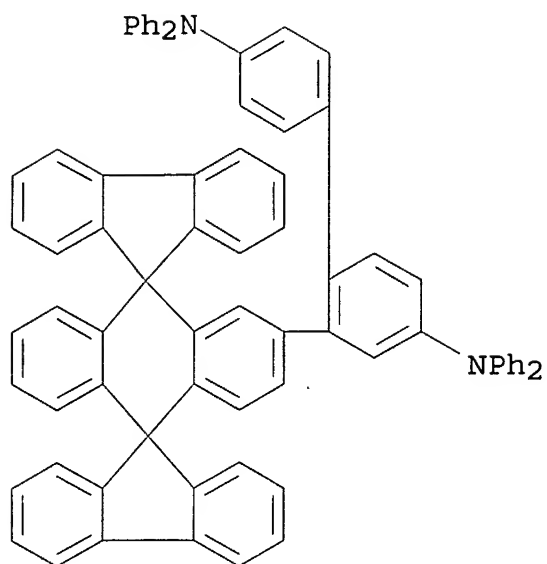


AB Double-spiro org. compds. are claimed which are described by the general formula I (R1-24 = independently selected substituents not all of which are H). **Light-emitting**, hole-transporting, and electron-transporting materials comprising the compds. are also described. **Electroluminescent** materials comprising the compds, including deposited films, methods for depositing the materials, and org. **electroluminescent** devices employing the materials, and method for fabricating the devices, are also described.

IT **474688-53-4P**  
(double-spiro org. compds. and **electroluminescent** devices using them)

RN 474688-53-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluoren]-2'-yl-N,N,N',N'-tetraphenyl- (9CI)  
(CA INDEX NAME)

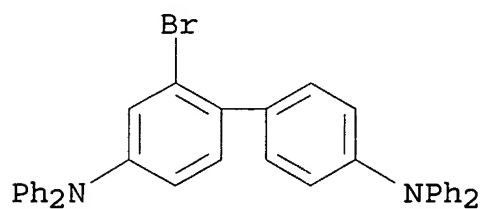


IT 474688-81-8

(double-spiro org. compds. and **electroluminescent**  
devices using them)

RN 474688-81-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2-bromo-N,N,N',N'-tetraphenyl- (9CI)  
(CA INDEX NAME)



IC ICM C09K011-06

ICS C07C013-72

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

Section cross-reference(s): 24, 76

ST double spiro org compd **electroluminescent** device

IT Semiconductor device fabrication

(double-spiro org. compds. and **electroluminescent**  
devices using them)

IT Spiro compounds

(double-spiro org. compds. and **electroluminescent**  
devices using them)

IT Luminescent substances



(electroluminescent; double-spiro org. compds. and electroluminescent devices using them)

IT **Electroluminescent devices**

(org.; double-spiro org. compds. and electroluminescent devices using them)

IT 159-56-8 474687-62-2D, derivs. 474687-68-8D, derivs.  
 474687-72-4 474687-74-6D, derivs. 474687-77-9D, derivs.  
 474687-79-1D, derivs. 474687-89-3 474687-90-6 474687-93-9  
 474687-95-1 474687-97-3 474688-01-2 474688-04-5 474688-09-0  
 474688-10-3 474688-11-4 474688-12-5 474688-13-6 474688-14-7  
 474688-15-8 474688-16-9 474688-17-0 474688-18-1 474688-19-2  
 474688-20-5 474688-21-6 474688-22-7 474688-23-8 474688-25-0  
 474688-26-1 474688-27-2 474688-28-3 474688-29-4 474688-30-7  
 474688-31-8 474688-32-9 474688-33-0 474688-34-1 474688-35-2  
 474688-36-3 474688-37-4 474688-38-5 474688-39-6 474688-40-9  
 474688-41-0 474688-42-1 474688-43-2 474688-44-3 474688-45-4  
 474688-46-5 474688-47-6 474688-48-7 474688-50-1 474688-52-3  
 474688-54-5 474688-59-0 474688-61-4 474688-62-5 474688-63-6  
 474688-64-7 474688-65-8 474688-66-9 474688-67-0 474688-68-1  
 474688-69-2

(double-spiro org. compds. and electroluminescent devices using them)

IT 474687-62-2P 474687-68-8P 474687-70-2P 474687-74-6P  
 474687-77-9P 474687-79-1P 474687-82-6P 474687-85-9P  
 474687-87-1P 474687-88-2P

(double-spiro org. compds. and electroluminescent devices using them)

IT 474687-91-7P 474687-92-8P 474687-94-0P 474687-96-2P  
 474687-98-4P 474687-99-5P 474688-00-1P 474688-02-3P  
 474688-03-4P 474688-05-6P 474688-06-7P 474688-07-8P  
 474688-08-9P 474688-24-9P 474688-49-8P 474688-51-2P  
**474688-53-4P** 474688-55-6P 474688-56-7P 474688-57-8P  
 474688-58-9P 474688-60-3P

(double-spiro org. compds. and electroluminescent devices using them)

IT 84-54-8, 2-Methylantraquinone 86-74-8, Carbazole 90-30-2  
 98-80-6, Phenylboronic acid 121-43-7, Trimethylborate 121-44-8,  
 Triethylamine, reactions 122-39-4, Diphenylamine, reactions  
 128-08-5, N-Bromosuccinimide 128-37-0, 2,6-Di-tert-butyl-4-  
 methylphenol, reactions 504-63-2, 1,3-Propanediol 523-27-3,  
 9,10-Dibromoanthracene 530-48-3, 1,1-Diphenylethylene 531-91-9,  
 Diphenylbenzidine 572-83-8, 2-Bromoanthraquinone 580-13-2,  
 2-Bromonaphthalene 626-39-1, 1,3,5-Tribromobenzene 633-70-5,  
 2,6-Dibromoanthraquinone 1564-64-3, 9-Bromoanthracene 2052-07-5,  
 2-Bromobiphenyl 7726-95-6, Bromine, reactions 17088-21-0,  
 1-Vinylpyrene 17919-34-5 23674-20-6, 9-Bromo-10-phenylanthracene  
 25069-74-3 28611-39-4, 4-(Dimethylamino)phenylboronic acid  
 201731-79-5, 2-Bromo-9,10-diphenylanthracene 201802-67-7

288105-04-4 334658-75-2 400607-16-1 474688-72-7 474688-73-8  
474688-74-9 474688-77-2 474688-80-7 **474688-81-8**

(double-spiro org. compds. and **electroluminescent**  
devices using them)

IT 6363-86-6P 13249-58-6P 22072-53-3P 85637-31-6P 103068-20-8P  
474688-70-5P 474688-71-6P 474688-75-0P 474688-76-1P  
474688-78-3P 474688-79-4P

(double-spiro org. compds. and **electroluminescent**  
devices using them)

L37 ANSWER 13 OF 21 HCA COPYRIGHT 2005 ACS on STN

137:360138 Luminescent block copolymers with conjugated bonds. Noguchi,  
Takanobu; Tsubata, Yoshiaki; Doi, Shuji (Sumitomo Chemical Company,  
Limited, Japan). PCT Int. Appl. WO 2002088223 A1 **20021107**  
, 77 pp. DESIGNATED STATES: W: KR, US; RW: AT, BE, CH, CY, DE, DK,  
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese).  
CODEN: PIXXD2. APPLICATION: WO 2002-JP4060 20020424. PRIORITY: JP  
2001-132011 20010427; JP 2001-132002 20010427.

AB The invention refers to a block copolymer suitable for use in  
**electroluminescent** devices, comprising two or more blocks  
and fluorescing in the solid state, wherein the block copolymer  
contains the same or different blocks made up of one or more  
repeating units joined by conjugated bonds, and the blocks  
themselves are also joined by conjugated bonds, and at least one of  
the blocks has a polystyrene conversion no. av. mol. wt. of 1  
.times. 103 to 1 .times. 108.

IT **474787-35-4P**

(luminescent block copolymers with conjugated bonds)

RN 474787-35-4 HCA

CN Poly[(phenylimino) (2,2'-dimethyl[1,1'-biphenyl]-4,4'-  
diyl) (phenylimino) [1,1'-biphenyl]-4,4'-diyl], .alpha.-[4'-[[2',5'-  
bis[(3,7-dimethyloctyl)oxy]-4'-formyl-2-methyl[1,1'-biphenyl]-4-  
yl]phenylamino] [1,1'-biphenyl]-4-yl]-.omega.-[[2',5'-bis[(3,7-  
dimethyloctyl)oxy]-4'-formyl-2-methyl[1,1'-biphenyl]-4-  
yl]phenylamino]-, polymer with .alpha., .omega.-bis[4-  
[(diethoxyphosphinyl)methyl]-2,5-bis[(3,7-  
dimethyloctyl)oxy]phenyl]poly(9,9-dioctyl-9H-fluorene-2,7-diyl),  
block (9CI) (CA INDEX NAME)

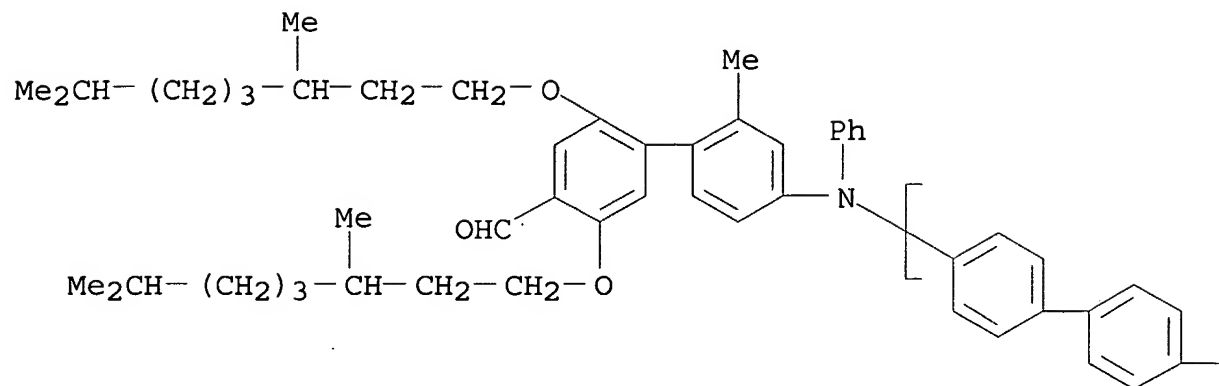
CM 1

CRN 474787-34-3

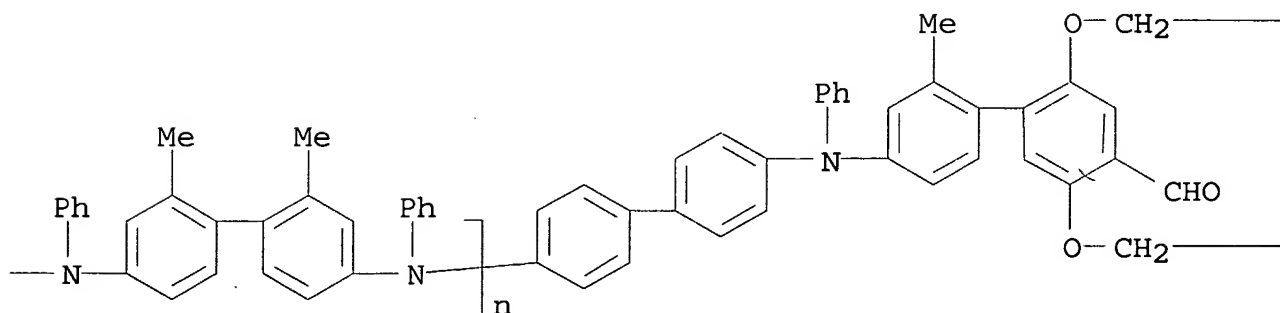
CMF (C38 H30 N2)n C92 H120 N2 O6

CCI PMS

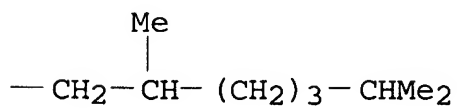
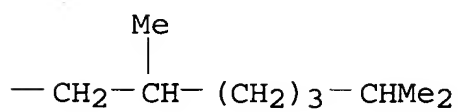
PAGE 1-A



PAGE 1-B



PAGE 1-C



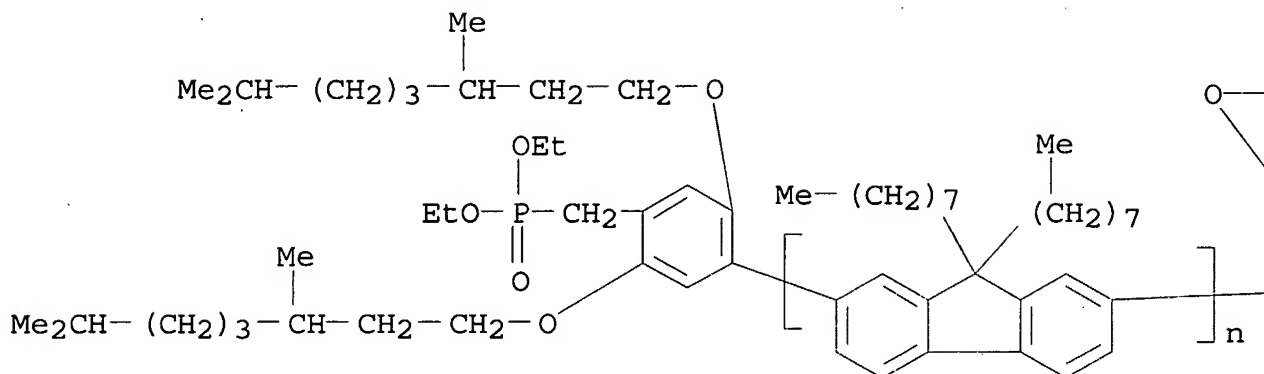
CM 2

CRN 474787-33-2

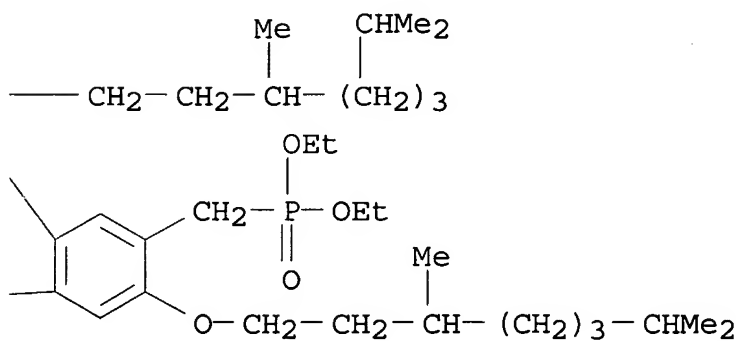
CMF (C29 H40)<sub>n</sub> C62 H112 O10 P2

CCI PMS

PAGE 1-A



PAGE 1-B



IC ICM C08G081-00

ICS G02F001-1335; H05B033-14; H05B033-12; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 35, 36, 38

IT Conjugation (bond)

**Electroluminescent** devices

Luminescent substances

(luminescent block copolymers with conjugated bonds)

IT 474787-32-1P **474787-35-4P**

(luminescent block copolymers with conjugated bonds)

L37 ANSWER 14 OF 21 HCA COPYRIGHT 2005 ACS on STN

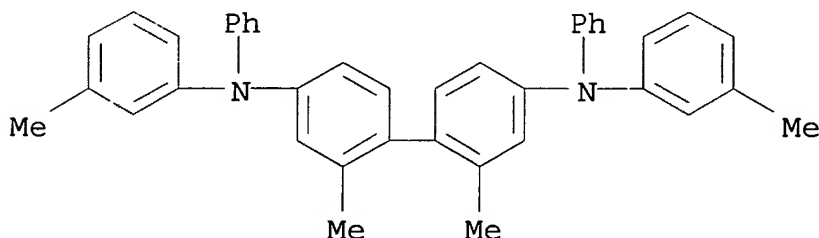
137:343728 Organic **electroluminescent** element, luminescent light source, lighting device, display device and method. Suzurizato, Yoshiyuki; Genta, Kazuo; Oshiyama, Tomohiro; Ueda, Noriko; Kita, Hiroshi (Konica Co., Japan). Jpn. Kokai Tokkyo Koho JP 2002324676 A2 20021108, 42 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-129284 20010426.

AB The invention refers to a **electroluminescent** component comprising an org. layer with a luminescent layer and a adjacent layer, wherein the max. luminescent wavelength of each of the two layers is .ltoreq. 415 nm, for a low energy, flexible, high-luminescence device.

IT 65181-79-5  
(org. **electroluminescent** element,  
luminescent light source, lighting device, display device  
and method)

RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; G09F009-30; H05B033-02; H05B033-12; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device light source imaging device

IT **Electroluminescent** devices

Optical imaging devices

(org. **electroluminescent** element,  
luminescent light source, lighting device, display device  
and method)

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 4733-39-5,  
2,9-Dimethyl-4,7-Diphenyl 1,10-phenanthroline 12254-04-5, Aluminum  
barium magnesium oxide Al10BaMgO17 13778-49-9, Barium silicate  
Ba2SiO4 65181-79-5 124729-98-2, MTDATA 405171-87-1  
405173-85-5 474304-09-1 474304-10-4 474304-11-5 474304-12-6,  
Germanium magnesium oxide (GeMg4O5.5)

(org. **electroluminescent** element,

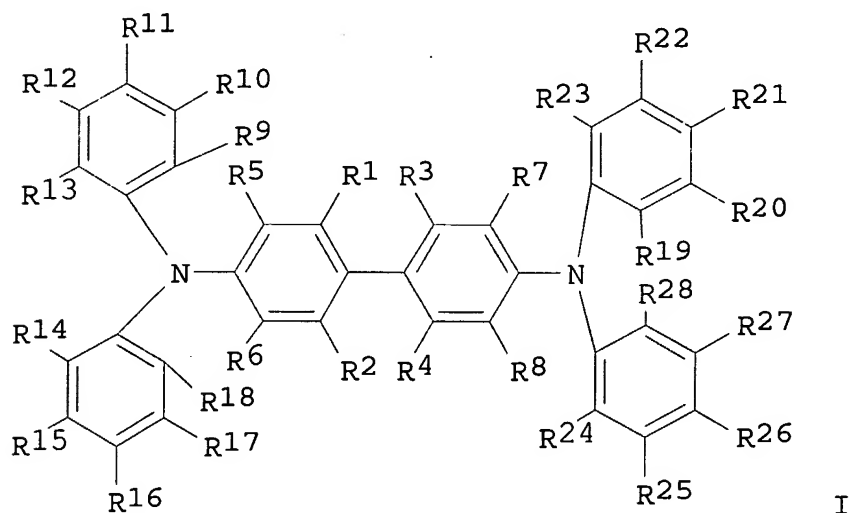
luminescent light source, lighting device, display device and method)

IT 16910-54-6, Europium 2+, uses 19768-33-3, Manganese 4+, uses (org. electroluminescent element, luminescent light source, lighting device, display device and method)

L37 ANSWER 15 OF 21 HCA COPYRIGHT 2005 ACS on STN

137:208162 Tetraphenylbenzidine derivatives and long-life organic electroluminescent devices (LED) therewith. Oshiyama, Tomohiro; Kita, Hiroshi; Yamada, Taketoshi (Konica Co., Japan). Jpn. Kokai Tokkyo Koho JP 2002249469 A2 20020906, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-45144 20010221.

GI



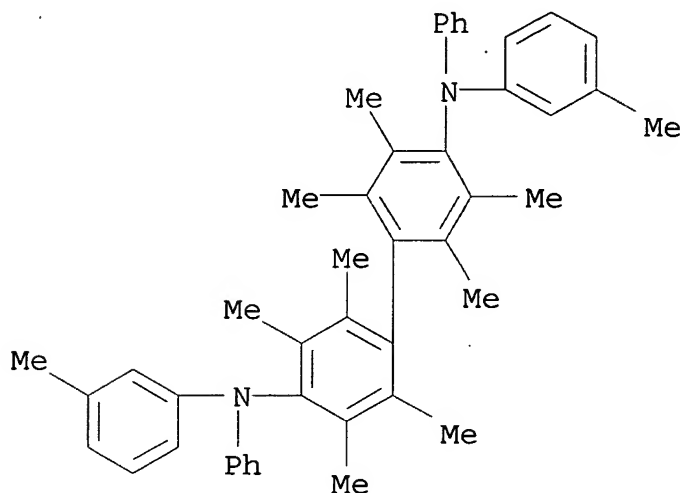
AB Tetraphenylbenzidine compds. I [R1-8 = H, substituent (not all are H; when one is alkyl and remainders are H, the one is C.gto req.2 alkyl); R9-13 = H, substituent (preferably aryl); R14-28 = H, halo, alkyl(oxy), cycloalkyl, alkenyl, carboxyl, OH, amido, alkoxy carbonyl] and org. LED including the compds. in emission layers or in hole-transporting layers and exhibiting bright blue-to-purple luminescence with high efficiency, are claimed. The LED may possess three inorg. compds., e.g., phosphors with emission peak (.lambda.p) 400-500 nm, those with .lambda.p 501-600 nm, and those with .lambda.p 601-700 nm, as wavelength converters in different layers.

IT 453590-45-9 453590-52-8 453590-53-9  
(tetraphenylbenzidine derivs. for long-life org. electroluminescent devices showing blue-to-purple

emission)

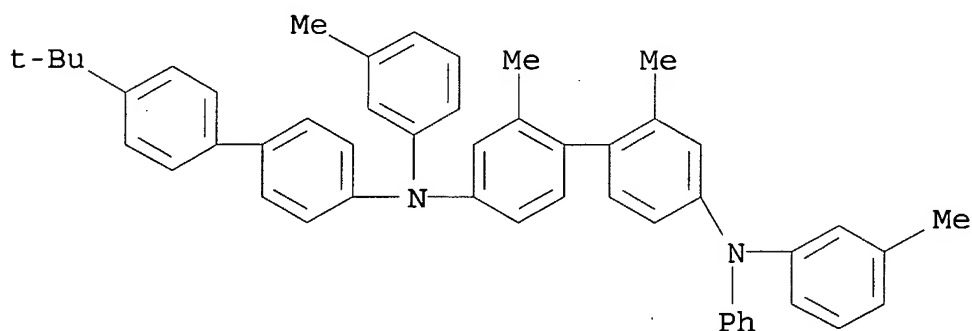
RN 453590-45-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',5,5',6,6'-octamethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



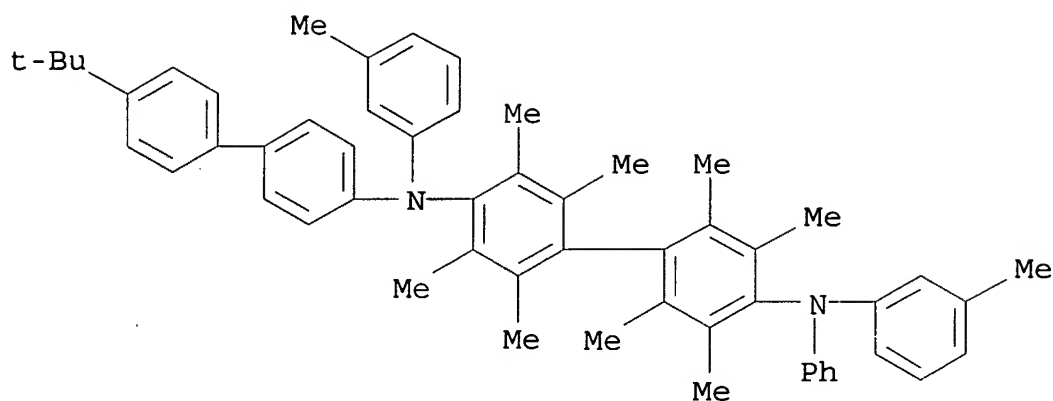
RN 453590-52-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-(1,1-dimethylethyl)[1,1'-biphenyl]-4-yl]-2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N'-phenyl- (9CI) (CA INDEX NAME)



RN 453590-53-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-(1,1-dimethylethyl)[1,1'-biphenyl]-4-yl]-2,2',3,3',5,5',6,6'-octamethyl-N,N'-bis(3-methylphenyl)-N'-phenyl- (9CI) (CA INDEX NAME)

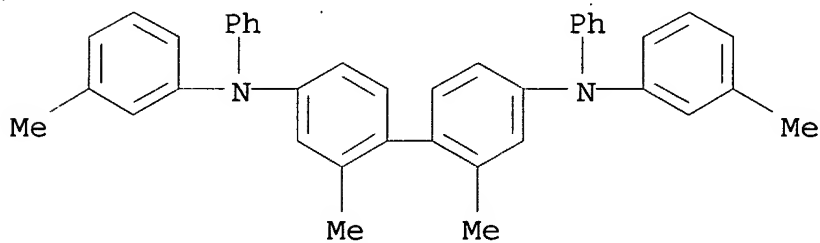


IT 65181-79-5P 453590-46-0P 453590-51-7P

(tetraphenylbenzidine derivs. for long-life org.  
**electroluminescent** devices showing blue-to-purple  
emission)

RN 65181-79-5 HCA

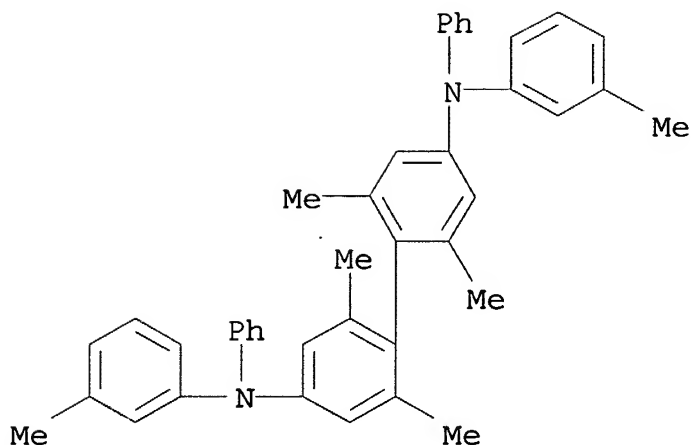
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-  
N,N'-diphenyl- (9CI) (CA INDEX NAME)



RN 453590-46-0 HCA

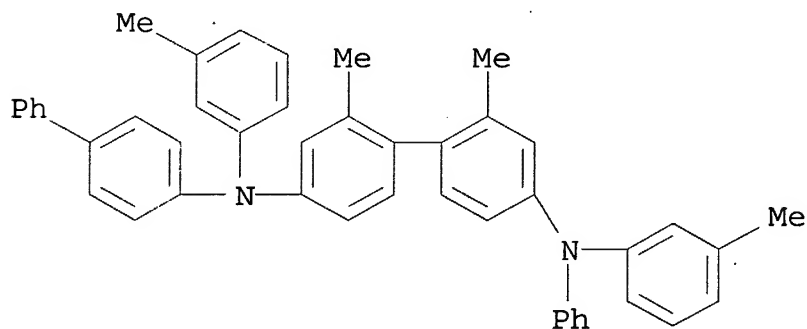
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',6,6'-tetramethyl-N,N'-bis(3-  
methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)





RN 453590-51-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N-[1,1'-biphenyl]-4-yl-2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N'-phenyl- (9CI) (CA INDEX NAME)

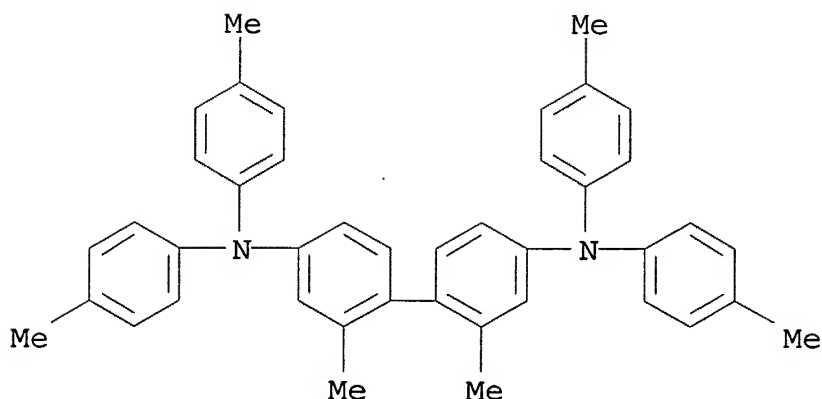


IT 80731-00-6P

(tetraphenylbenzidine derivs. for long-life org. electroluminescent devices showing blue-to-purple emission)

RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



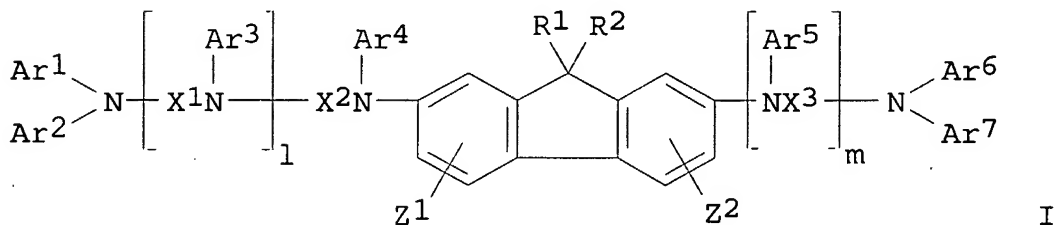
- IC ICM C07C211-54  
ICS C07C217-92; C09K011-06; H05B033-12; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25
- ST **electroluminescent** device phenylbenzidine blue purple emission; emission hole transporting layer LED phenylbenzidine
- IT Luminescent substances  
(**electroluminescent**; tetraphenylbenzidine derivs. for long-life org. **electroluminescent** devices showing blue-to-purple emission)
- IT **Electroluminescent** devices  
(org.; tetraphenylbenzidine derivs. for long-life org. **electroluminescent** devices showing blue-to-purple emission)
- IT Phosphors  
(wavelength converters; tetraphenylbenzidine derivs. for long-life org. **electroluminescent** devices showing blue-to-purple emission)
- IT 12254-04-5, Barium magnesium aluminate (BaMgAl<sub>10</sub>O<sub>17</sub>) 12529-18-9, Gadolinium strontium sulfide (Gd<sub>2</sub>SrS<sub>4</sub>)  
(Eu-activated, wavelength converters; tetraphenylbenzidine derivs. for long-life org. **electroluminescent** devices showing blue-to-purple emission)
- IT 12140-73-7, Germanium magnesium oxide (GeMg<sub>4</sub>O<sub>6</sub>)  
(Mn-activated, wavelength converters; tetraphenylbenzidine derivs. for long-life org. **electroluminescent** devices showing blue-to-purple emission)
- IT 142068-90-4P  
(in prepn. of tetraphenylbenzidine derivs. for blue-to-purple-emitting long-life org. **LED**)
- IT 84-67-3, m-Tolidine 99-12-7, 3,5-Dimethylnitrobenzene 620-93-9  
1205-64-7, 3-Methyldiphenylamine

- (in prepn. of tetraphenylbenzidine derivs. for blue-to-purple-emitting long-life org. LED)
- IT 453590-45-9 453590-52-8 453590-53-9  
(tetraphenylbenzidine derivs. for long-life org. **electroluminescent** devices showing blue-to-purple emission)
- IT 65181-79-5P 453590-46-0P 453590-51-7P  
(tetraphenylbenzidine derivs. for long-life org. **electroluminescent** devices showing blue-to-purple emission)
- IT 80731-00-6P  
(tetraphenylbenzidine derivs. for long-life org. **electroluminescent** devices showing blue-to-purple emission)

L37 ANSWER 16 OF 21 HCA COPYRIGHT 2005 ACS on STN

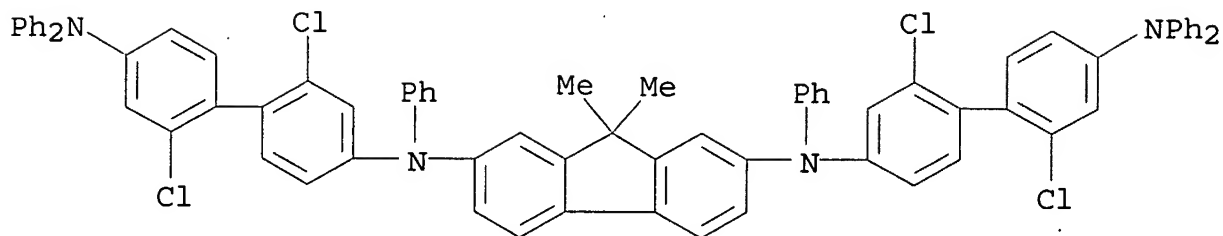
135:187795 New amine compound for organic **electroluminescent** device showing longer luminescent lifetime and excellent durability. Shimamura, Takehiko; Nakatsuka, Masakatsu; Ishida, Tsutomu (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2001226331 A2 20010821, 75 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-34477 20000214.

GI



AB The new amine compd. is represented by a general formula I (Ar1-7 = aryl; R1, R2 = H, alkyl, aryl, aralkyl; Z1, Z2 = H, halo, alkyl, alkoxy, aryl; X1-3 = arylene; 1, m = 0, 1) and synthesized. The amine compd. is suitable as a pos. hole injection transport material in an org. **electroluminescent** display device.

- IT 354987-70-5  
(amine compd. for org. **electroluminescent** device showing longer luminescent lifetime and excellent durability)
- RN 354987-70-5 HCA
- CN 9H-Fluorene-2,7-diamine, N,N'-bis[2,2'-dichloro-4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-9,9-dimethyl-N,N'-diphenyl-(9CI) (CA INDEX NAME)



- IC ICM C07C211-61  
ICS C07C217-94; C07D209-86; C07D213-74; C07D265-38; C07D279-26;  
C07D333-36; C09K011-06; H05B033-14; H05B033-22
- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 73
- ST amine compd synthesis pos hole injection transport material;  
**electroluminescent** display device amine compd charge  
transport material
- IT **Electroluminescent** devices  
(amine compd. for org. **electroluminescent** device  
showing longer luminescent lifetime and excellent durability)
- IT 354987-33-0 354987-34-1 354987-35-2 354987-37-4 354987-38-5  
354987-40-9 354987-41-0 354987-44-3 354987-45-4 354987-48-7  
354987-49-8 354987-51-2 354987-53-4 354987-54-5 354987-56-7  
354987-57-8 354987-59-0 354987-60-3 354987-61-4 354987-63-6  
354987-64-7 354987-65-8 354987-66-9 354987-69-2  
**354987-70-5** 354987-72-7 354987-73-8  
(amine compd. for org. **electroluminescent** device  
showing longer luminescent lifetime and excellent durability)
- IT 354987-31-8P 354987-32-9P 354987-36-3P 354987-39-6P  
354987-42-1P 354987-43-2P 354987-46-5P 354987-47-6P  
354987-50-1P 354987-52-3P 354987-55-6P 354987-58-9P  
354987-62-5P 354987-67-0P 354987-71-6P  
(amine compd. for org. **electroluminescent** device  
showing longer luminescent lifetime and excellent durability)
- IT 74-31-7 106-37-6, 1,4-Dibromobenzene 3001-15-8,  
4,4'-Diiodobiphenyl 19606-98-5 138417-49-9 144981-86-2,  
2,7-Diiodo-9,9-dimethyl-9H-fluorene 195443-34-6 280113-41-9  
302579-18-6 308144-59-4 308144-63-0, 2-(N,N-Diphenylamino)-9,9-  
dimethyl-7-iodo-9H-fluorene 329180-34-9 354987-74-9  
354987-75-0 354987-76-1 354987-77-2 354987-78-3 354987-79-4  
354987-80-7 354987-81-8 354987-82-9 354987-83-0 354987-84-1  
354987-85-2 354987-86-3  
(synthesis of amine compd. for org. **electroluminescent**  
device showing longer luminescent lifetime and excellent  
durability)

129:295965 Organic **electroluminescent** device with high luminance and polycyclic phosphorescent compound therefor. Onikubo, Shunichi; Tamano, Michiko; Okutsu, Satoshi; Enokida, Toshio (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10251633 A2 19980922 Heisei, 59 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-62568 19970317.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The claimed compd. is I [A = arom. (condensed) ring, (condensed) heterocycle excluding Q1 (E = H or linkage), bivalent group comprising .gtoreq.2 kinds of 2-10 above ring systems which are connected directly or via O, N, S, C1-20 chain, nonarom. cycle, where the case of A = Q3 is excluded; Ar1-4 = (condensed) arom. group; X1-4 = O, S, CO, SO2, CxH2xOCyH2y (x, y = 0-20; x + y .noteq. 0), C2-20 alkyl(id)ene, bivalent alicyclic group; R1-20 = H, halo, alkyl (oxy), arom. ring, arom. heterocycle, amino]. Also claimed is an org. **electroluminescent** device contg. I with high luminance and good stability in repeated uses.

IT 213968-67-3

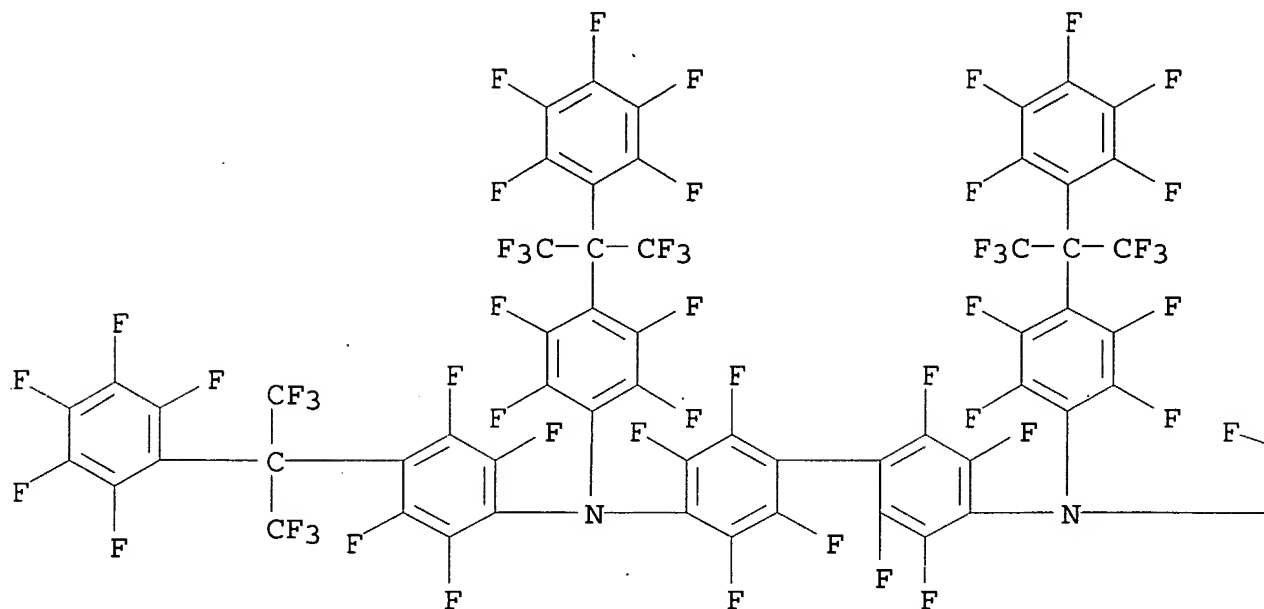
(luminescent material; org.

**electroluminescent** device contg. polycyclic phosphorescent compd. with high luminance)

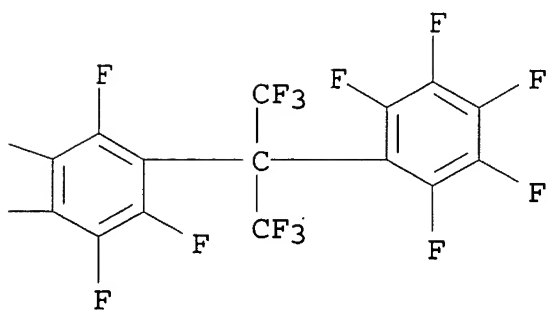
RN 213968-67-3 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',5,5',6,6'-octafluoro-N,N,N',N'-tetrakis[2,3,5,6-tetrafluoro-4-[2,2,2-trifluoro-1-(pentafluorophenyl)-1-(trifluoromethyl)ethyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C09K011-06  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

Section cross-reference(s): 25

ST **electroluminescent** device polycyclic phosphorescent compd  
luminance

IT **Electroluminescent** devices

(org.; org. **electroluminescent** device contg. polycyclic  
phosphorescent compd. with high luminance)

IT	205697-02-5	213968-34-4	213968-36-6	213968-38-8	213968-40-2
	213968-41-3	213968-42-4	213968-43-5	213968-44-6	213968-45-7
	213968-46-8	213968-47-9	213968-48-0	213968-49-1	213968-50-4
	213968-51-5	213968-52-6	213968-53-7	213968-54-8	213968-55-9
	213968-56-0	213968-57-1	213968-58-2	213968-59-3	213968-60-6
	213968-61-7	213968-62-8	213968-63-9	213968-64-0	213968-65-1
	213968-66-2	<b>213968-67-3</b>	213968-68-4	213968-69-5	
	213968-70-8	213968-71-9	213968-73-1	213968-74-2	213968-75-3
	213968-76-4	213968-77-5	213968-79-7	213968-80-0	213968-81-1
	213968-82-2	213968-83-3	213968-85-5	213968-86-6	213968-87-7
	213968-88-8	213968-89-9	213968-91-3	213968-92-4	213968-93-5
	213968-94-6	213968-95-7	213968-96-8	213968-97-9	213968-98-0
	213968-99-1	213969-00-7	213969-01-8	213969-02-9	213969-03-0
	213969-04-1	213969-05-2	213969-06-3	213969-07-4	213969-08-5
	213969-09-6	213969-10-9	213969-11-0	213969-12-1	213969-13-2
	213969-14-3	213969-15-4	213969-16-5	213969-17-6	213969-18-7
	213969-19-8	213969-20-1	213969-21-2	213969-22-3	213969-23-4

(**luminescent** material; org.

**electroluminescent** device contg. polycyclic  
phosphorescent compd. with high luminance)

L37 ANSWER 18 OF 21 HCA COPYRIGHT 2005 ACS on STN

128:186310 Synthesis and properties of new hole transport materials for organic **light emitting** devices. Thelakkat, Mukundan; Bacher, Andreas; Fink, Ralf; Haubner, Frank; Schmidt, Hans-Werner (Makromolekulare Chemie I, Bayreuther Institute Makromolekulforschung, Universitat Bayreuth, Bayreuth, 95440, Germany). Proceedings of SPIE-The International Society for Optical Engineering, 3148 (Organic Light-Emitting Materials and Devices), 306-312 (English) 1997. CODEN: PSISDG. ISSN: 0277-786X.

Publisher: SPIE-The International Society for Optical Engineering.  
AB The authors synthesized low-mol.-wt. tri-Ph diamines (TPDs), novel 1,3,5-tris(diarylamino)benzenes (TDABs), polymeric tri-Ph diamines and insol. tri-Ph amine networks based on tris(4-ethynylphenyl)amine as hole transport materials for **electroluminescent** displays. The HOMO energy values as detd. from cyclic voltammetry measurements for TPDs and TDABs are between -4.97 and -5.16 eV. By using a polymeric TPD as hole transport layer and tris(8-quinolinolato)aluminum as emitter, LEDs with an onset voltage of 3V and a luminance up to 900 cd/m<sup>2</sup> were obtained under ambient conditions, using airstable Al-electrode as cathode and ITO as

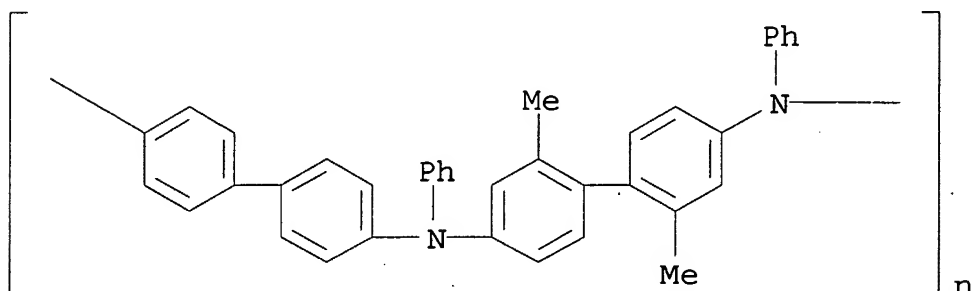
anode.

IT 201026-17-7P

(synthesis and properties of new hole transport materials for org. **light emitting** devices)

RN 201026-17-7 HCA

CN Poly[(phenylimino) (2,2'-dimethyl[1,1'-biphenyl]-4,4'-diyl) (phenylimino) [1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST hole transport amine org LED; **light emitting** device hole transport

IT **Electroluminescent** devices

HOMO (molecular orbital)

Hole transport

(synthesis and properties of new hole transport materials for org. **light emitting** devices)

IT Amines, properties

Polyamines

(synthesis and properties of new hole transport materials for org. **light emitting** devices)

IT 2085-33-8P, Tris(8-quinolinolato)aluminum

(emitter layer; synthesis and properties of new hole transport materials for org. **light emitting** devices)

IT 15546-43-7P 20441-07-0P 104216-56-0P 107001-70-7P

122738-21-0P 137832-75-8P 189178-08-3P 189178-09-4P

201026-13-3P 201026-14-4P **201026-17-7P** 202477-56-3P

203450-59-3P 203450-60-6P 203450-61-7P 203450-62-8P

203450-64-0P

(synthesis and properties of new hole transport materials for org. **light emitting** devices)

L37 ANSWER 19 OF 21 HCA COPYRIGHT 2005 ACS on STN

128:94870 Synthesis and properties of novel hole transport materials for **electroluminescent** devices. Thelakkat, Mukundan; Fink, Ralf; Haubner, Frank; Schmidt, Hans Werner (Bayreuther Inst. Makromolekueulforschung, Univ. Bayreuth, Bayreuth, D-95440, Germany).



Macromolecular Symposia, 125 (Organic Light-Emitting Materials and Devices), 157-164 (English) 1998. CODEN: MSYMEC. ISSN: 1022-1360. Publisher: Huethig & Wepf Verlag.

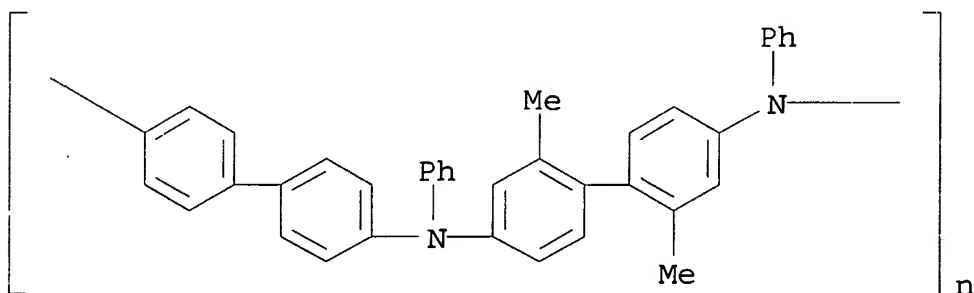
AB Low-mol.-wt. triphenyldiamines (TPDs), novel 1,3,5-tris(diarylamino)benzenes (TDABs), polymeric triphenyldiamines, and insol. triphenylamine networks based on tris(4-ethynylphenyl)amine were prepd. as hole transport materials for **electroluminescent** displays. The HOMO energies as detd. from cyclic voltammetry for TPDs and TDABs are between -4.97 and -5.16 eV. By using a polymeric TPD as hole transport layer and tris(8-quinolinolato)aluminum as emitter, LEDs with an onset voltage of 3 V and a luminance .ltoreq.900 cd/m2 were obtained under ambient conditions.

IT 201026-17-7P

(prepn. and properties of phenylamines and polymers thereof as hole transport materials for **electroluminescent** devices)

RN 201026-17-7 HCA

CN Poly[(phenylimino) (2,2'-dimethyl[1,1'-biphenyl]-4,4'-diyl) (phenylimino) [1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 37, 76

ST phenylamine prepn polymn **electroluminescent** device; polymeric phenyldiamine LED; HOMO energy phenylamine polymer **electroluminescence**; oxidn potential phenylamine polymer **electroluminescence**

IT HOMO (molecular orbital)

(energy; of phenylamines and polymers thereof as hole transport materials for **electroluminescent** devices)

IT Luminescence, **electroluminescence**

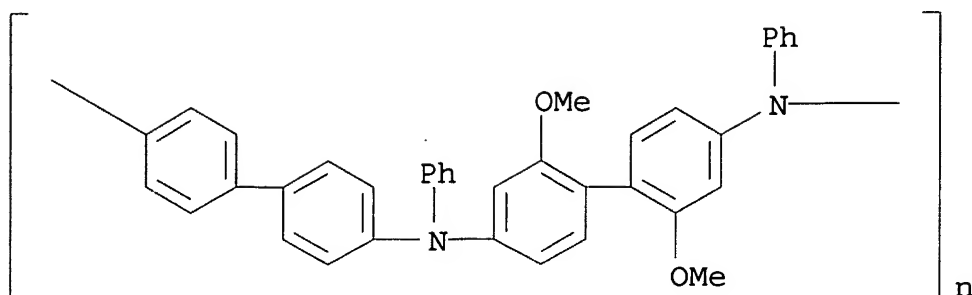
Oxidation potential

(of phenylamines and polymers thereof as hole transport materials for **electroluminescent** devices)

IT **Electroluminescent** devices

(prepn. and properties of phenylamines and polymers thereof as

- hole transport materials for)
- IT 201026-15-5P 201026-18-8P  
(prepn. and properties of phenylamines and polymers thereof as  
hole transport materials for **electroluminescent**  
devices)
- IT 15546-43-7P 20441-07-0P 107001-70-7P 122738-21-0P  
126738-30-5P 137832-75-8P 184895-04-3P 184895-05-4P  
189178-04-9P 189178-05-0P 189178-08-3P 189178-09-4P  
201026-13-3P 201026-14-4P **201026-17-7P**  
(prepn. and properties of phenylamines and polymers thereof as  
hole transport materials for **electroluminescent**  
devices)
- IT 90-14-2, 1-Iodonaphthalene 101-70-2, Bis(4-methoxyphenyl)amine  
104-94-9 108-73-6, Phloroglucinol 122-39-4, Diphenylamine,  
reactions 536-74-3, Phenylacetylene 696-62-8, 4-Iodoanisole  
1066-54-2, Trimethylsilylacetylene 1208-86-2, (4-  
Methoxyphenyl)phenylamine 1591-31-7, 4-Iodobiphenyl 2974-94-9,  
4-Iodophenyl phenyl ether 3001-15-8 4316-58-9,  
Tris(4-bromophenyl)amine 22362-94-3, 2-Iodoanthracene  
(prepn. and properties of phenylamines and polymers thereof as  
hole transport materials for **electroluminescent**  
devices)
- L37 ANSWER 20 OF 21 HCA COPYRIGHT 2005 ACS on STN  
126:299494 New hole transport material for organic **light**  
**emitting** devices. Thelakkat, Mukundan; Bacher, Andreas;  
Fink, Ralf; Haubner, Frank; Schmidt, Hans-Werner (Makromolekulare  
Chemie I, Universitaet Bayreuth, Bayreuth, 95440, Germany). Polymer  
Preprints (American Chemical Society, Division of Polymer  
Chemistry), 38(1), 396-397 (English) 1997. CODEN: ACPPAY.  
ISSN: 0032-3934. Publisher: American Chemical Society, Division of  
Polymer Chemistry.
- AB The triphenylamine derivs. having high polarization potentials and  
high Ts were synthesized. The materials can be used as hole  
transport materials and as emitters in **electroluminescent**  
devices. The synthesis, spectral properties and their applications  
in LEDs are described.
- IT **189178-07-2P**  
(synthesis and properties and application of new hole transport  
material for org. **light emitting** devices)
- RN 189178-07-2 HCA  
CN Poly[(phenylimino) (2,2'-dimethoxy[1,1'-biphenyl]-4,4'-  
diyl) (phenylimino) [1,1'-biphenyl]-4,4'-diyl] (9CI) (CA INDEX NAME)



- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 76
- ST hole transport material org LED; **light emitting**  
device triphenylamine deriv
- IT **Electroluminescent** devices  
(synthesis and properties and application of new hole transport material for org. **light emitting** devices)
- IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato). 7429-90-5, Aluminum, uses 50926-11-9, Indium tin oxide  
(synthesis and properties and application of new hole transport material for org. **light emitting** devices)
- IT 15546-43-7P 20441-07-0P 107001-70-7P 122738-21-0P  
126738-30-5P 137832-75-8P 184895-04-3P 184895-05-4P  
189178-04-9P 189178-05-0P **189178-07-2P** 189178-08-3P  
189178-09-4P  
(synthesis and properties and application of new hole transport material for org. **light emitting** devices)
- IT 104-94-9 108-73-6, 1,3,5-Benzenetriol 122-39-4D, derivs  
531-91-9 3001-15-8 4316-58-9  
(synthesis and properties and application of new hole transport material for org. **light emitting** devices)
- L37 ANSWER 21 OF 21 HCA COPYRIGHT 2005 ACS on STN  
120:231192 Significance of multilayer structures in organic thin-film **electroluminescent** devices. Tsutsui, Tetsuo; Aminaka, Eiichiro; Hamada, Yuji; Adachi, Chihaya; Saito, Shogo (Dep. Mater. Sci. Technol., Grad. Sch. Eng. Kyushu Univ., Kyushu, 816, Japan). Proceedings of SPIE-The International Society for Optical Engineering, 1910(Electroluminescent Materials, Devices, and Large-Screen Displays), 180-9 (English) 1993. CODEN: PSISDG. ISSN: 0277-786X.
- AB Using 3 9,10-distyrylanthracene derivs. (BSA's) with different substituents for emission layer materials, various types of **electroluminescent (EL)** devices were fabricated.  
Combining with a triphenylamine deriv. as a hole transport layer

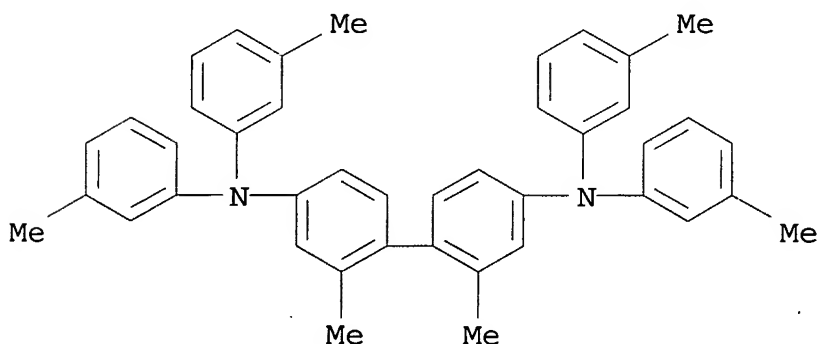
material and an oxadiazole deriv. as an electron transport layer material, 2- and 3-layer type devices were fabricated. The performances of 2- and 3-layer type devices were largely dependent on the electronic nature of emission layer materials. The BSA's attached with electron-donating groups have the specific electronic nature which allowed the transport of both electrons and holes; a single layer devices with .apprx.100 nm-thick BSA layer showed high luminance comparable with conventional 2-layer type devices. Two-layer type devices which consisted of 2 different BSA layers were prep'd. to confirm that BSA layers behave as both electron and hole transporting materials. BSA with an electron-accepting substituent behaved as an electron transport material. BSA's with electron-donating groups showed the bipolar charge transporting characteristics, which means the capability of transport of both electrons and holes.

IT 80730-98-9

(in **electroluminescent** device)

RN 80730-98-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22, 76

ST **electroluminescent** device styrylanthracene deriv;  
anthracene styryl deriv **electroluminescent** device

IT **Luminescence**

**Luminescence, electro-**  
(of org. thin films)

IT **Electroluminescent** devices  
(org., multilayer thin films)

IT 37271-44-6, Magnesium, silver  
(electrode, in **electroluminescent** device)

IT 15082-28-7 50926-11-9, Indium tin oxide 60949-10-2 62555-92-4  
80730-98-9 138685-19-5  
(in **electroluminescent** device)

=> d 138 1-38 cbib abs hitstr hitrn

L38 ANSWER 1 OF 38 HCA COPYRIGHT 2005 ACS on STN

139:388417 Electrophotographic imaging members. Fu, Min-Hong; Helbig, Colleen A.; Evans, Kent J.; Carmichael, Kathleen M.; Schneider, June E.; Skinner, David M.; Willnow, Alfred H. (Xerox Corporation, USA). U.S. US 6645686 B1 20031111, 9 pp. (English). CODEN: USXXAM. APPLICATION: US 2002-205127 20020723.

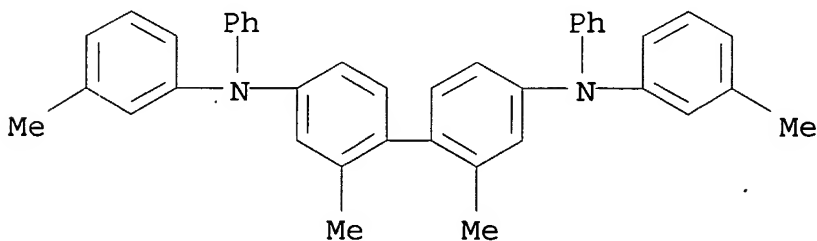
AB An electrophotog. imaging member comprises a substrate, a charge generating layer, and a charge transport layer. The charge transport layer comprises a binder and charge transport mols., wherein the binder eliminates or minimizes crystn. of the charge transport mols. Optionally, an electrophotog. imaging member comprises a substrate and a single charge generating and charge transport layer. The single charge generating and charge transport layer comprises a binder, charge generating mols. and charge transport mols., wherein the binder eliminates or minimizes crystn. of the charge transport mols. Specific binders are PCZ 800, a PCZ 500, or a PCZ 400 polycarbonate resin.

IT 65181-79-5 80730-93-4 80730-94-5  
80731-00-6 623142-18-7

(charge transport agent; electrophotog. imaging members contg.)

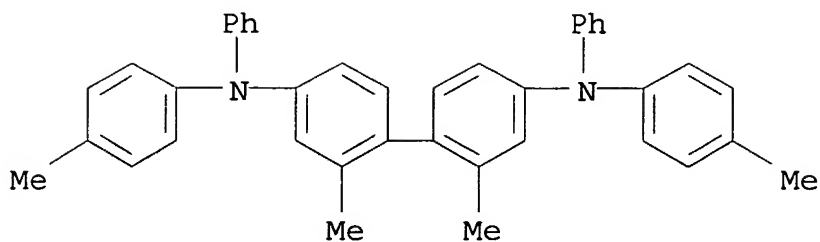
RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)

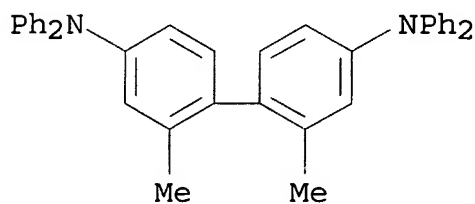


RN 80730-93-4 HCA

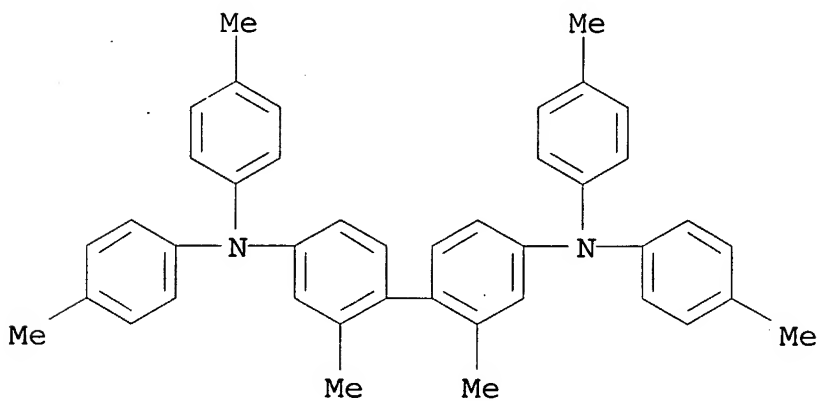
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



RN 80730-94-5 HCA

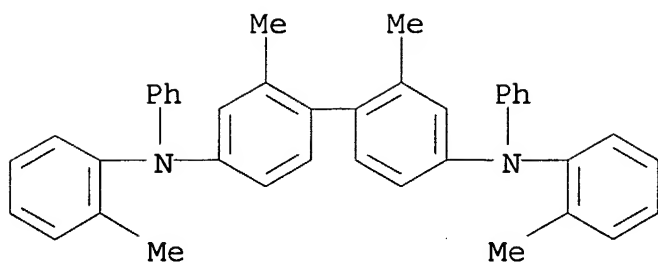
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetraphenyl-  
(9CI) (CA INDEX NAME)

RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-  
methylphenyl)- (9CI) (CA INDEX NAME)

RN 623142-18-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(2-methylphenyl)-  
N,N'-diphenyl- (9CI) (CA INDEX NAME)



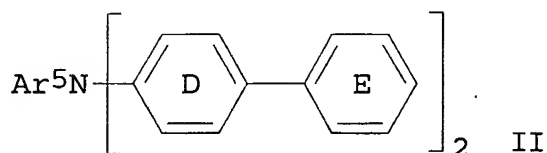
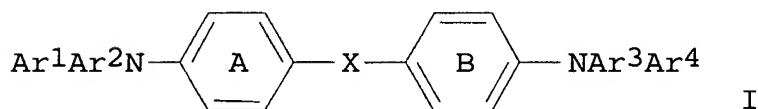
IT 65181-79-5 80730-93-4 80730-94-5  
80731-00-6 623142-18-7

(charge transport agent; electrophotog. imaging members contg.)

L38 ANSWER 2 OF 38 HCA COPYRIGHT 2005 ACS on STN

139:92690 Electrophotographic photoreceptor for process cartridge of electrophotographic image-forming apparatus. Nakata, Koichi; Morikawa, Yosuke; Yoshimura, Kimihiro; Tanaka, Daisuke (Canon Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003186214 A2 20030703, 50 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-389182 20011221.

GI



AB The title photoreceptor has light-sensitive layers and a protective layer on an electroconductive support, wherein the protective layer is made of a heat-hardenable resin and wherein light-sensitive layer contains oxytitanium phthalocyanine as a charge-generating compd., I (Ar1-4 = aryl; A, B = benzene ring having substituent of halo, alkyl, alkoxy; X = single bond, alkylene, arylene, etc.) or II (Ar5 = aryl; D, E = benzene ring having substituent of halo, alkyl, alkoxy) as charge-transporting compds. The photoreceptor shows high

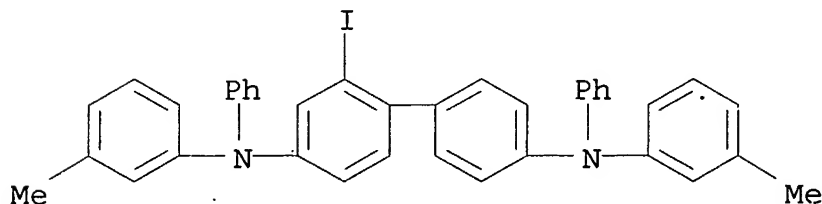
sensitivity, low residual voltage, and highly durable surface protecting layer.

IT 552866-11-2

(charge-transporting compd. in electrophotog. photoreceptor)

RN 552866-11-2 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2-iodo-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



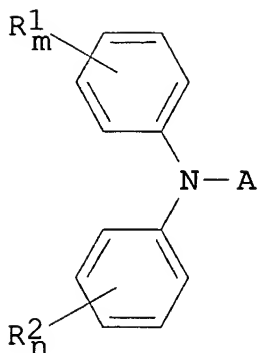
IT 552866-11-2

(charge-transporting compd. in electrophotog. photoreceptor)

L38 ANSWER 3 OF 38 HCA COPYRIGHT 2005 ACS on STN

136:142582 Electrosensitive material. Miyamoto, Eiichi; Fukunaga, Hideaki; Inagaki, Yoshio (Kyocera Mita Corporation, Japan; Kyocera Corporation). Eur. Pat. Appl. EP 1176469 A1 20020130, 246 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2001-306364 20010725. PRIORITY: JP 2000-224240 20000725; JP 2000-243150 20000810; JP 2000-250409 20000822; JP 2000-281051 20000918; JP 2000-311421 20001012; JP 2000-355340 20001122; JP 2000-366431 20001201; JP 2001-20876 20010130.

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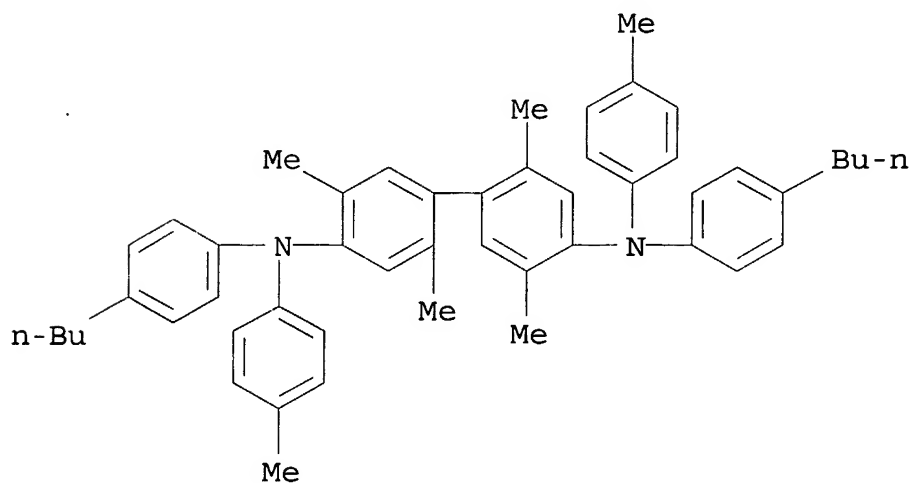
AB The invention disclosed an electrophotosensitive material comprising an org. photosensitive layer and an inorg. surface protective layer, wherein at least the outermost part of the org. photosensitive layer contains a diphenylamine compd. I (A is a group which can jointly form a .pi.-electron conjugated system with the two Ph groups in the formula; R1 and R2 each represent an H atom, halogen atom, alkyl group, alkoxy group, etc., and R1 and R2 may form a condensed ring with the Ph group; m, n = 0-5). The electrophotosensitive material has excellent durability because compd. I functions as a binder for combining the org. photosensitive layer with the inorg. surface protective layer so that the surface protective layer is less prone to suffer cracks or delamination.

IT 393586-92-0 393586-93-1

(pos.-hole transport compd. in electrophotog. material)

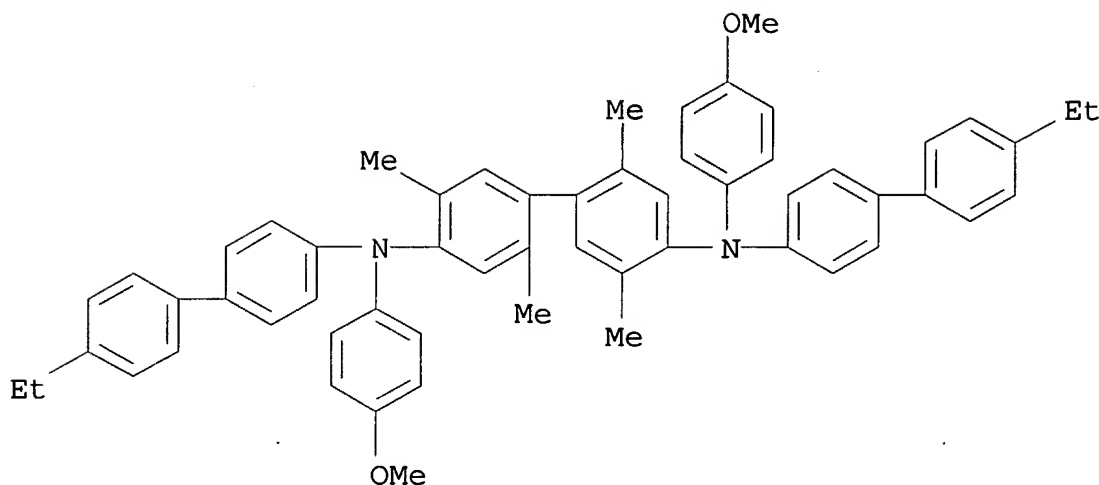
RN 393586-92-0 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(4-butylphenyl)-2,2',5,5'-tetramethyl-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 393586-93-1 HCA

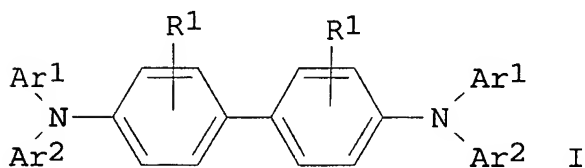
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(4'-ethyl[1,1'-biphenyl]-4-yl)-N,N'-bis(4-methoxyphenyl)-2,2',5,5'-tetramethyl- (9CI) (CA INDEX NAME)



IT 393586-92-0 393586-93-1  
(pos.-hole transport compd. in electrophotog. material)

L38 ANSWER 4 OF 38 HCA COPYRIGHT 2005 ACS on STN  
136:126495 Electrophotographic photoconductor with improved high  
sensitivity and stable performance. Koderu, Tatsuya; Horiuchi,  
Tamotsu (Mitsubishi Paper Mills, Ltd., Japan). Jpn. Kokai Tokkyo  
Koho JP 2002023398 A2 20020123, 9 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2000-210619 20000712.

GI



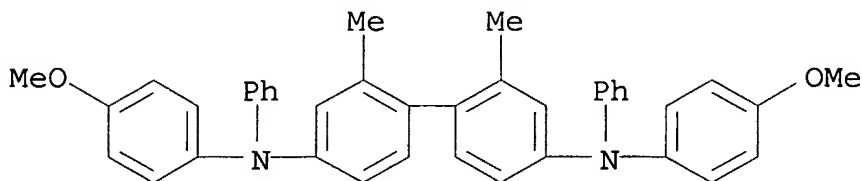
AB The invention relates to an electrophotog. photoconductor which  
contains a phthalocyanine compn. comprised of oxytitanium  
phthalocyanine and metal-free phthalocyanine as charge generation  
materials, wherein the phthalocyanine compn. has prominent x-ray  
diffraction peaks at 7.0, 9.0, 14.1, 18.0, 23.7, and 27.3.degree..  
The electrophotog. photoconductor contains a triarylamine compd.  
represented by I (R1 = H, alkyl, alkoxy, halo; Ar1, Ar2 = alkyl,  
alkenyl, aryl, aralkyl) as a charge transport substance. The  
electrophotog. photoconductor shows high sensitivity as well as  
excellent durability.

IT 390822-46-5

(triarylamine charge transport material in electrophotog.  
photoconductor to improve high sensitivity and stable  
performance)

RN 390822-46-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(4-methoxyphenyl)-2,2'-  
dimethyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IT 390822-46-5

(triarylamine charge transport material in electrophotog.  
photoconductor to improve high sensitivity and stable  
performance)

L38 ANSWER 5 OF 38 HCA COPYRIGHT 2005 ACS on STN

133:245068 Electrophotographic photoreceptor. Taniguchi, Tomoko;  
Horiuchi, Tamotsu (Mitsubishi Paper Mills, Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2000250240 A2 20000914, 15 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1999-48800 19990225.

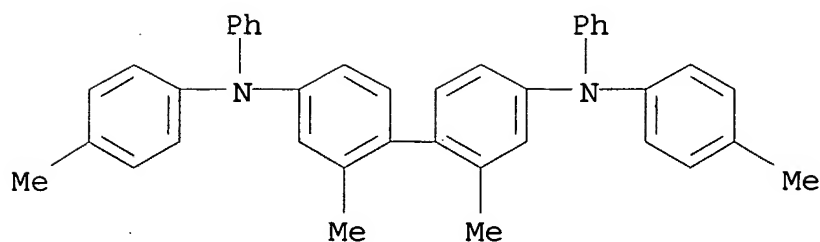
AB The electrophotog. photoreceptor has a light-sensitive layer contg.  
a charge-generating material and a charge-transporting material on  
an electroconductive support. The charge-generating material is  
titanyloxyphthalocyanine of peaks at 9.5.degree., 13.5.degree.,  
14.2.degree., 18.0.degree., 24.0.degree., and 17.2.degree. of  
Bragg's angle (2.THETA..+-0.2.degree.) with respect to  
Cu.KAPPA.alpha. 1.54 .ANG. x-ray. The charge-transporting material  
is a benzidine deriv. The photoreceptor shows the high charging  
voltage, the high sensitivity, and the long service-life.

IT 80730-93-4 293752-15-5

(benzidine deriv. as charge-transporting material in  
electrophotog. photoreceptor)

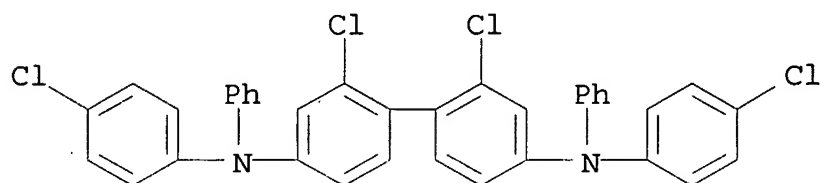
RN 80730-93-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(4-methylphenyl)-  
N,N'-diphenyl- (9CI) (CA INDEX NAME)



RN 293752-15-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dichloro-N,N'-bis(4-chlorophenyl)-  
N,N'-diphenyl- (9CI) (CA INDEX NAME)



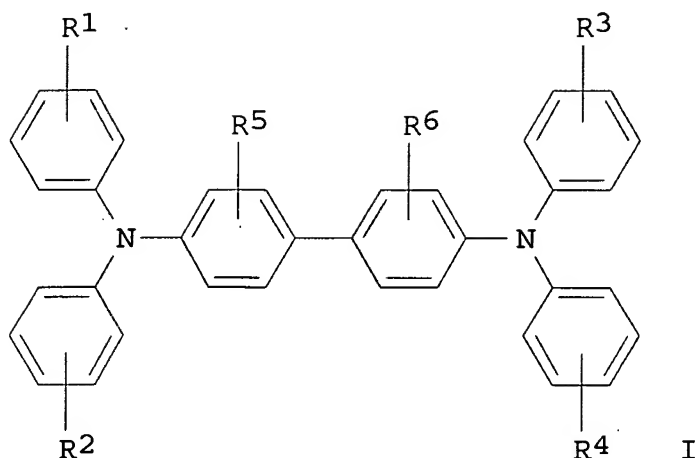
IT 80730-93-4 293752-15-5

(benzidine deriv. as charge-transporting material in  
electrophotog. photoreceptor)

L38 ANSWER 6 OF 38 HCA COPYRIGHT 2005 ACS on STN

132:173349 Electrophotographic photoreceptor, process cartridge, and  
electrophotographic apparatus. Kunieda, Mitsuhiro; Kikuchi,  
Norihiro; Kanamaru, Tetsuo (Canon Inc., Japan). Jpn. Kokai Tokkyo  
Koho JP 2000056490 A2 20000225, 24 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1998-226131 19980810.

GI



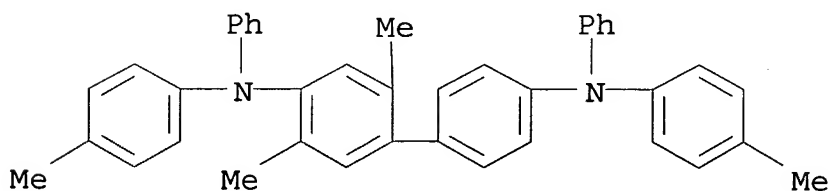
AB The photoreceptor comprises an elec.-conductive substrate and a photosensitive layer contg. diaminobiphenyls I [R1-R4 = H, alkyl, alkoxy, OH, NO<sub>2</sub>, allyl, (un)substituted aryl, aralkyl, halo; R5, R6 = (un)substituted alkyl, aralkyl, aryl; n = 0-2] and A(CH:NNR<sub>7</sub>R<sub>8</sub>)<sub>m</sub> [R<sub>7</sub>, R<sub>8</sub> = (un)substituted alkyl, aralkyl, aryl; m = 1, 2; A = (un)substituted arom, aliph., heteroarom. group] or (R<sub>21</sub>mC<sub>6</sub>H<sub>5</sub>-m) (R<sub>22</sub>mC<sub>6</sub>H<sub>5</sub>-m)C:CHCH:C(R<sub>23</sub>mC<sub>6</sub>H<sub>5</sub>-m) (R<sub>24</sub>mC<sub>6</sub>H<sub>5</sub>-m) [R<sub>21</sub>-R<sub>24</sub> = H, alkyl, substituted amino, OH, NO<sub>2</sub>, allyl, (un)substituted aryl, aralkyl, halo; m = 0-2]. Also claimed are a process cartridge equipped with the photoreceptor and an electrophotog. app. equipped with the photoreceptor. The photoreceptor shows high sensitivity, durability, and very small transfer memory in a reversal development process.

IT 123875-70-7

(electrophotog. photoreceptor contg. diaminobiphenyls and hydrazones or tetraphenylbutadienes as charge-transporting agents)

RN 123875-70-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,5-dimethyl-N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IT 123875-70-7

(electrophotog. photoreceptor contg. diaminobiphenyls and hydrazones or tetraphenylbutadienes as charge-transporting agents)

L38 ANSWER 7 OF 38 HCA COPYRIGHT 2005 ACS on STN

131:213925 Persistent perfluoroalkyl radical investigations under reductive environment reaction with electron-donating reagents. Ono, Taizo; Fukaya, Haruhiko; Hayashi, Eiji; Saida, Hiroko; Abe, Takashi; Henderson, Philip B.; Fernandez, Richard E.; Scherer, Kirby V. (Chemistry Department, Fluorine Chemistry Laboratory, National Industrial Research Institute of Nagoya, Nagoya, 462-8510, Japan). Journal of Fluorine Chemistry, 97(1-2), 173-182 (English) 1999. CODEN: JFLCAR. ISSN: 0022-1139. Publisher: Elsevier Science S.A..

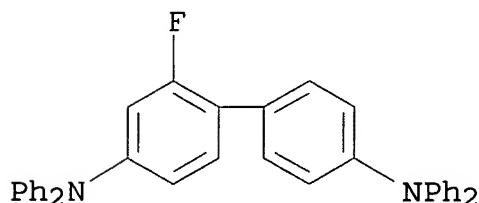
AB The reactivity of persistent perfluoroalkyl radical, perfluoro-3-ethyl-2,4-dimethyl-3-pentyl (1), with various electron-donating reagents was investigated. It is revealed that 1 which is robust under oxidative conditions is rather vulnerable under reductive conditions. Thus, Lewis bases such as triethylamine and triphenylpnictogens (Ph<sub>3</sub>Pn, Pn=N, P, As, Sb, Bi) and some soft anions such as iodide or tetraphenylborate reacted with 1 to give perfluoro-3-isopropyl-4-methylpent-2-ene (2) quant. Even very weak Lewis bases such as di-Et ether and di-Et sulfide also reacted with 1 to give 2 and addnl. a hydrido product, perfluoro-3-ethyl-3-H-2,4-dimethylpentane (4). Hydrogen gas did not react with 1 at all without a catalyst, but in the presence of metal Pd adsorbed on charcoal, smoothly reacted to give 2 in quant. yield. Metal hydrides such as LiAlH<sub>4</sub>, NaBH<sub>4</sub>, NaH, BH<sub>3</sub> (THF complex), Bu<sub>3</sub>SnH, Me<sub>2</sub>PhSiH reacted with 1 to give 2 and 4. That an electron transfer mechanism is operating in the formation of 2 is obvious, but not conclusive in the formation of 4.

IT 243459-98-5P

(reactivity of persistent perfluoroalkyl radical perfluoro-3-ethyl-2,4-dimethyl-3-pentyl with strong and weak Lewis bases, hydrogen, and metal hydrides)

RN 243459-98-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2-fluoro-N,N,N',N'-tetraphenyl- (9CI)  
(CA INDEX NAME)

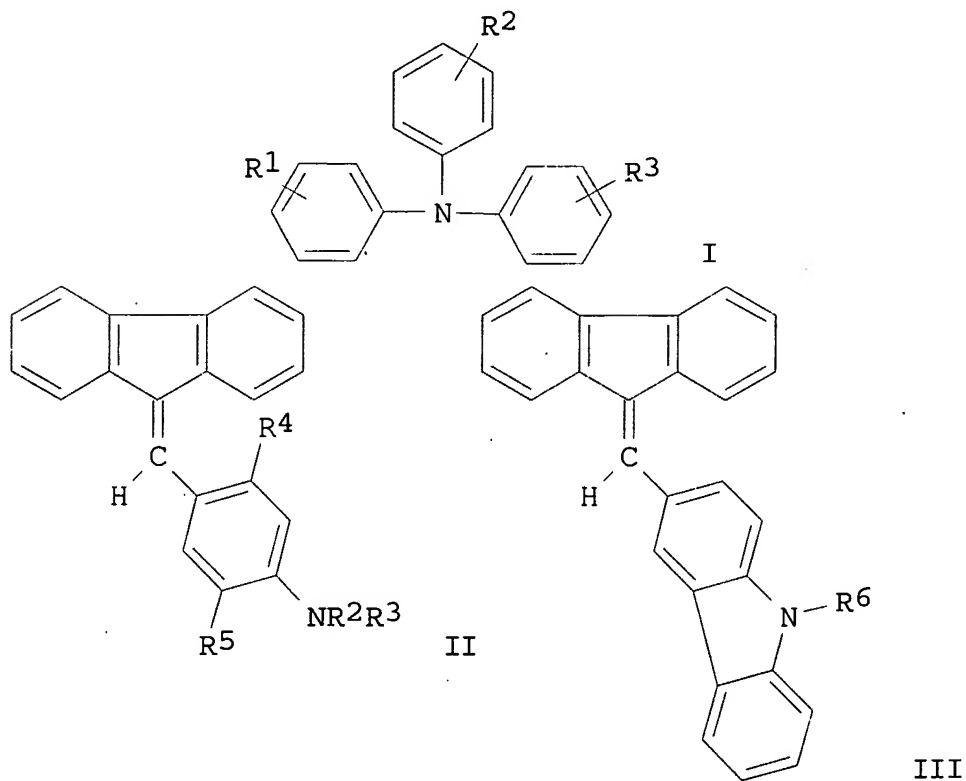


IT 243459-98-5P

(reactivity of persistent perfluoroalkyl radical  
perfluoro-3-ethyl-2,4-dimethyl-3-pentyl with strong and weak  
Lewis bases, hydrogen, and metal hydrides)

L38 ANSWER 8 OF 38 HCA COPYRIGHT 2005 ACS on STN  
129:283403 Electrophotographic photoreceptor with improve sensitivity  
and durability. Kurimoto, Eiji; Umeta, Minoru; Sakon, Yota; Ikeue,  
Takaaki (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
10239872 A2 19980911 Heisei, 240 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1997-55642 19970224.

GI



AB The title photoreceptor contains I ( $R_1, R_2, R_3 = H$ , lower alkyl, lower alkoxy, Ph, phenoxy, halo), II ( $R_1 = H$ , halo, CN, lower alkyl;  $R_2, R_3 = H$ , lower alkyl, benzyl;  $R_4, R_5 = H$ , halo, lower alkyl, lower alkoxy, di-lower alkylamino) and III ( $R_1 = H$ , halo, CN, lower alkyl;  $R_6 = H$ , lower alkyl, benzyl) in a photosensitive layer. 26 More charge transport materials with Markush structures are also claimed.

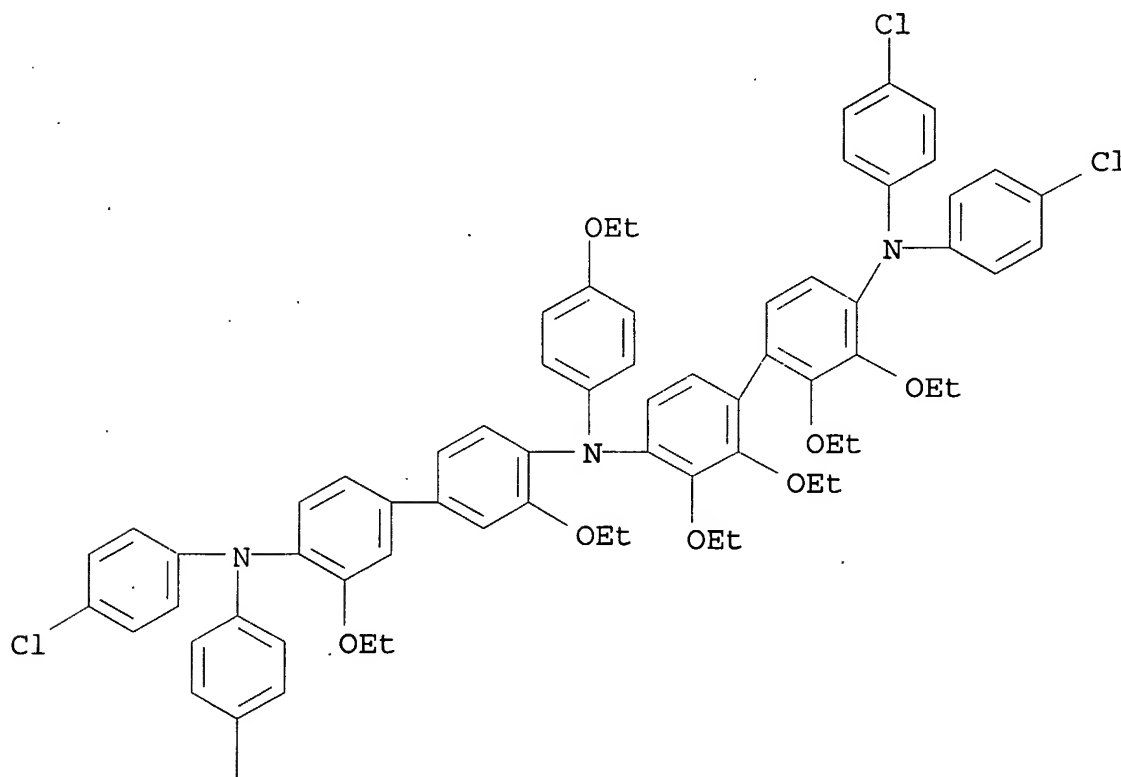
IT 213898-68-1

(charge transport material in electrophotog. photoreceptor with improve sensitivity and durability)

RN 213898-68-1 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-[bis(4-chlorophenyl)amino]-3,3'-diethoxy[1,1'-biphenyl]-4-yl]-N',N'-bis(4-chlorophenyl)-2,2',3,3'-tetraethoxy-N-(4-ethoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IT 213898-68-1

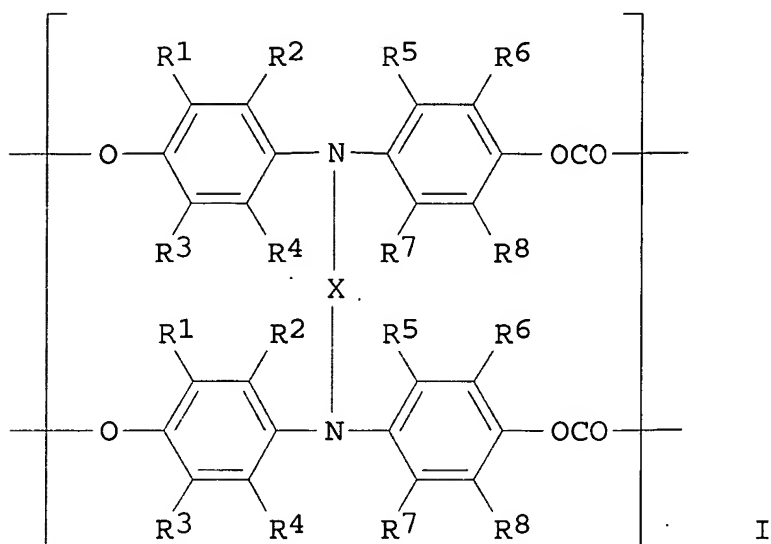
(charge transport material in electrophotog. photoreceptor with improve sensitivity and durability)

L38 ANSWER 9 OF 38 HCA COPYRIGHT 2005 ACS on STN



129:168066 Electrophotographic photoreceptor and process cartridge.  
 Suzuki, Koichi (Canon K. K., Japan). Jpn. Kokai Tokkyo Koho JP  
 10186705 A2 19980714 Heisei, 14 pp. (Japanese). CODEN:  
 JKXXAF. APPLICATION: JP 1996-347634 19961226.

GI



AB In the electrophotog. photoreceptor having a photosensitive layer formed on an elec. conductive support, a surface layer of the photoreceptor contains a polymer represented by I (R1-8 = H, halo, alkyl; and X = alkylene, cycloalkylene, alkenylene, arylene). The photoreceptor which integrated into a process cartridge was also claimed. The photoreceptor exhibited excellent sliding property, storage stability, and cleaning property.

IT 211125-48-3

(electrophotog. photoreceptor and process cartridge)

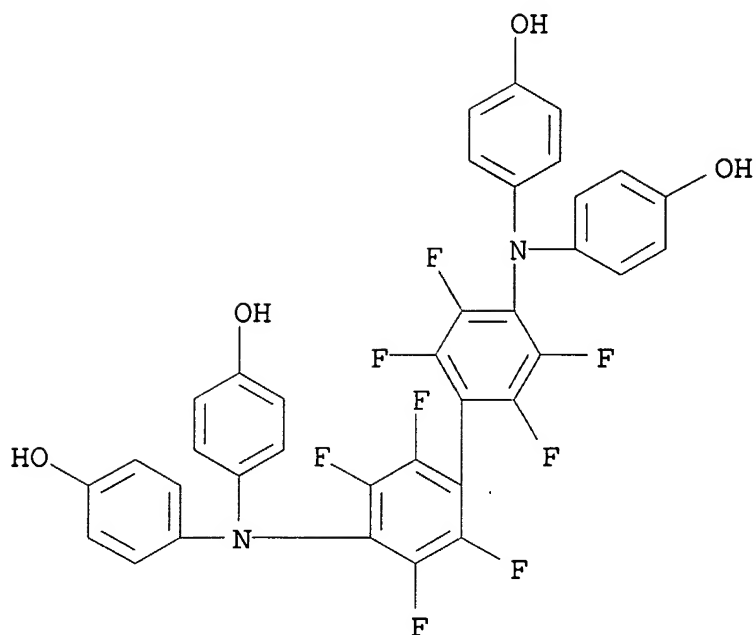
RN 211125-48-3 HCA

CN Carbonic acid, polymer with 4,4',4'',4'''-[(2,2',3,3',5,5',6,6'-octafluoro[1,1'-biphenyl]-4,4'-diyl)dinitrilo]tetrakis[phenol] (9CI)  
 (CA INDEX NAME)

CM 1

CRN 211125-47-2

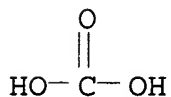
CMF C36 H20 F8 N2 O4



CM 2

CRN 463-79-6

CMF C H2 O3



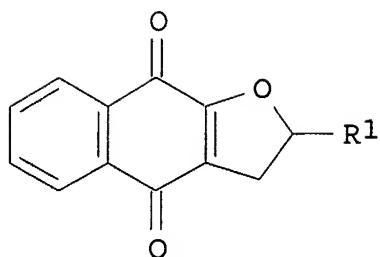
IT 211125-48-3

(electrophotog. photoreceptor and process cartridge)

L38 ANSWER 10 OF 38 HCA COPYRIGHT 2005 ACS on STN

126:96897 Electrophotographic photoreceptor with improved light resistance. Imanaka, Yukikatsu; Myamoto, Eiichi (Mita Industrial Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08286401 A2 19961101 Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-91114 19950417.

GI



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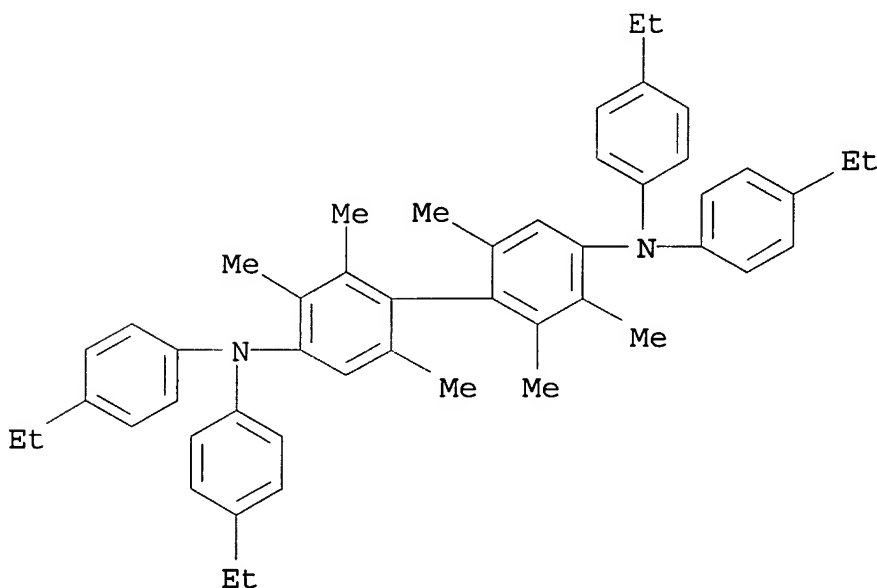
AB The photoreceptor comprises an elec. conductive substrate coated with a photosensitive layer contg. a 2,3-dihydronaphthofuran-4,9-dione deriv. I (R1 = H, alkyl, alkoxy, aryl, halo, cyano, NO2). The photoreceptor showed improved light resistance and good durability in repeated use.

IT 184865-77-8

(charge-transporting agent; electrophotog. photoreceptor contg. dihydronaphthofurandione deriv. light stabilizer)

RN 184865-77-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'-tetrakis(4-ethylphenyl)-2,2',3,3',6,6'-hexamethyl- (9CI) (CA INDEX NAME)

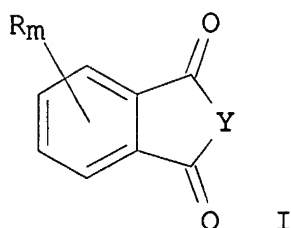


IT 184865-77-8

(charge-transporting agent; electrophotog. photoreceptor contg. dihydronaphthofurandione deriv. light stabilizer)

126:52845 Electrophotographic photoconductor using indandione or ninhydrin derivatives as positive hole-transporting agent. Imanaka, Yukikatsu; Myamoto, Eiichi (Mita Industrial Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08278642 A2 19961022 Heisei, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-84148 19950410.

GI



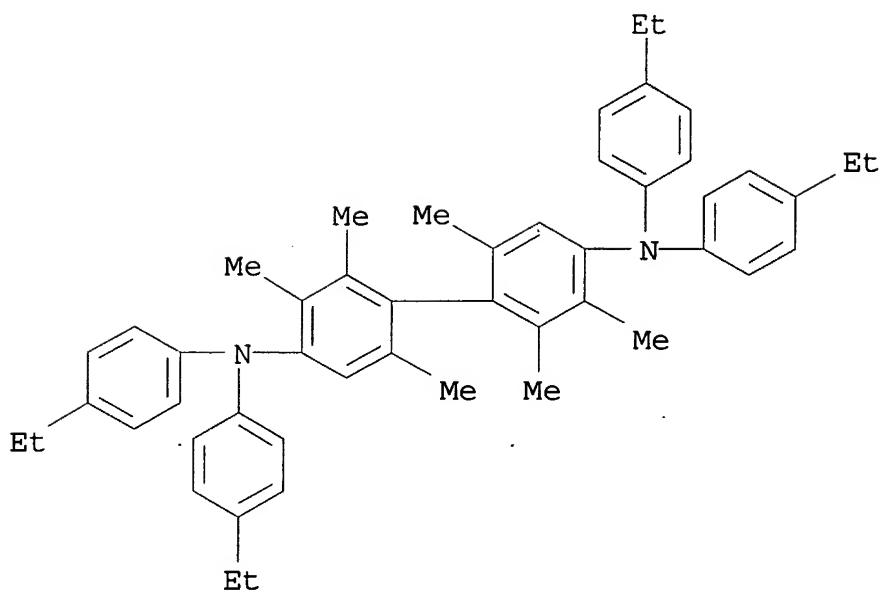
AB The photoconductor consists of successively laminated a charge-generating layer and a charge-transporting layer contg. indandiones or ninhydrins I [Y = CH<sub>2</sub>, C(OH)<sub>2</sub>, CO; R = H, alkyl, aryl, alkoxy, halo; m = 1-4] as pos. hole-transporting agent. The charge-generating layer may contain bisazo, perylene, and/or phthalocyanine pigments. The photoconductor showing improved light resistance and stable changeability is applicable in repeating use.

IT 184865-77-8

(charge-transporting agent; in electrophotog. photoconductor using indandione or ninhydrin deriv. as pos. hole-transporting agent)

RN 184865-77-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'-tetrakis(4-ethylphenyl)-2,2',3,3',6,6'-hexamethyl- (9CI) (CA INDEX NAME)



IT 184865-77-8

(charge-transporting agent; in electrophotog. photoconductor using indandione or ninhydrin deriv. as pos. hole-transporting agent)

L38 ANSWER 12 OF 38 HCA COPYRIGHT 2005 ACS on STN

126:13051 Electrophotographic imaging member including charge-transporting layer with high charge carrier mobility. Stolka, Milan; Hsieh, Bing R.; Antoniadis, Homer; Mcgrane, Kathleen M.; Abkowitz, Martin A. (Xerox Corp., USA). Eur. Pat. Appl. EP 736811 A2 19961009, 12 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1996-302252 19960329. PRIORITY: US 1995-400244 19950403.

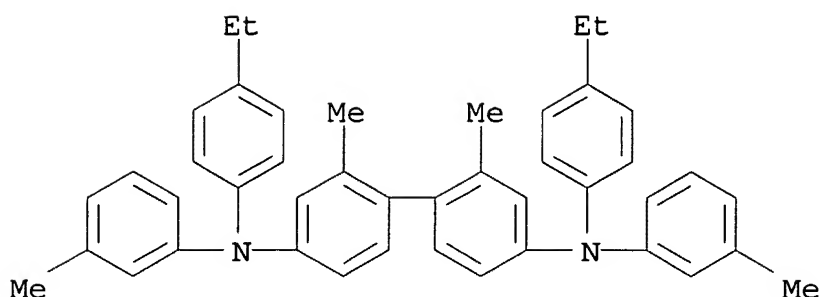
AB An electrophotog. imaging member includes a charge-generating layer and a charge-transporting layer, the charge-transporting layer comprising a .pi.-conjugated polymeric binder and a charge-transporting agent.

IT 184089-36-9

(charge-transporting agent for electrophotog. photoreceptors contg. .pi.-conjugated polymeric binders)

RN 184089-36-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(4-ethylphenyl)-2,2'-dimethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



IT 184089-36-9

(charge-transporting agent for electrophotog. photoreceptors  
contg. .pi.-conjugated polymeric binders)

L38 ANSWER 13 OF 38 HCA COPYRIGHT 2005 ACS on STN

125:71750 Electrophotosensitive material. Katsukawa, Masato; Tanaka, Masashi; Yamazoto, Ichiro; Nakamura, Yuka (Mita Industrial Co., Ltd., Japan; Kyocera Mita Corporation). Eur. Pat. Appl. EP 710892 A1 19960508, 97 pp. DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI. (English). CODEN: EPXXDW. APPLICATION: EP 1995-307466 19951019. PRIORITY: JP 1994-282670 19941021.

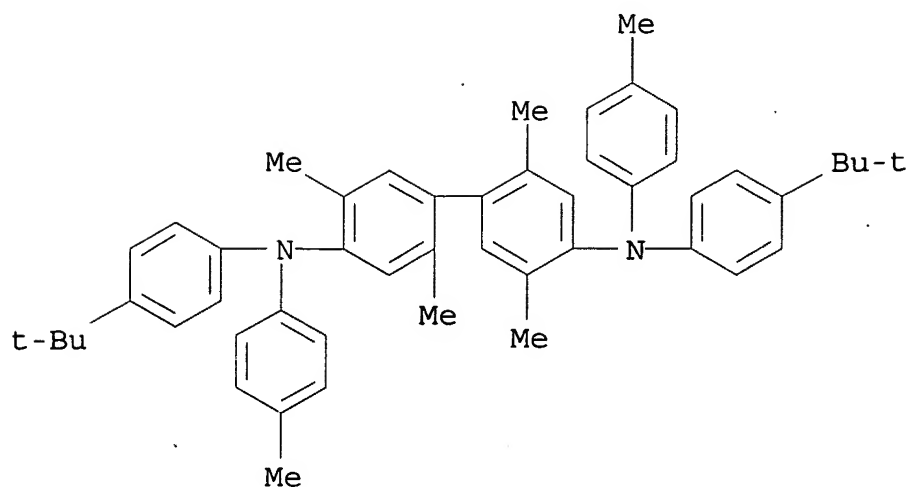
AB There is disclosed an electrophotosensitive material using a binding resin of a bisphenol C type, bisphenol Z type, bisphenol Z type contg. a substituent or bisphenol C copolymer type polycarbonate in combination with a hole-transferring material of a specific benzidine or phenylenediamine deriv. This photosensitive material is superior in mech. strength and repeat characteristics and has a high glass transition temp. and a high sensitivity.

IT 167377-41-5 167377-42-6 174303-35-6  
175616-12-3

(electrophotog. photoreceptors contg. bisphenolic polycarbonates  
and)

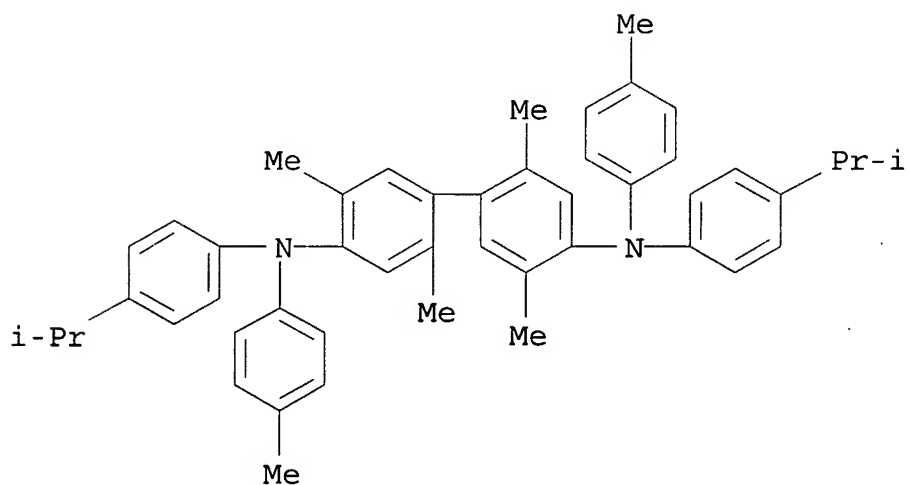
RN 167377-41-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-2,2',5,5'-tetramethyl-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



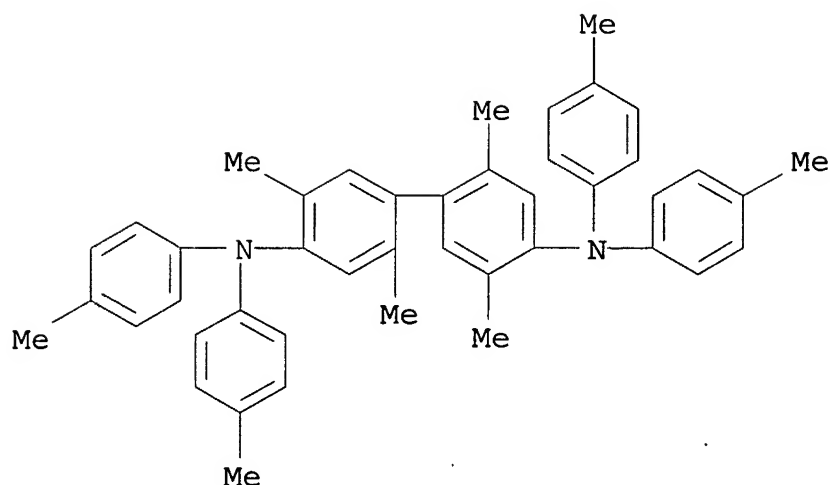
RN 167377-42-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-bis[4-(1-methylethyl)phenyl]-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



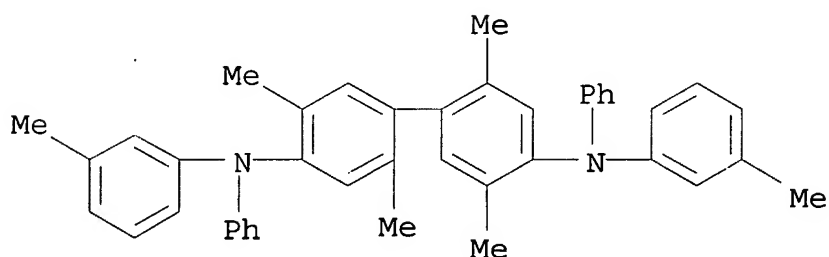
RN 174303-35-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 175616-12-3 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IT 167377-41-5 167377-42-6 174303-35-6  
175616-12-3

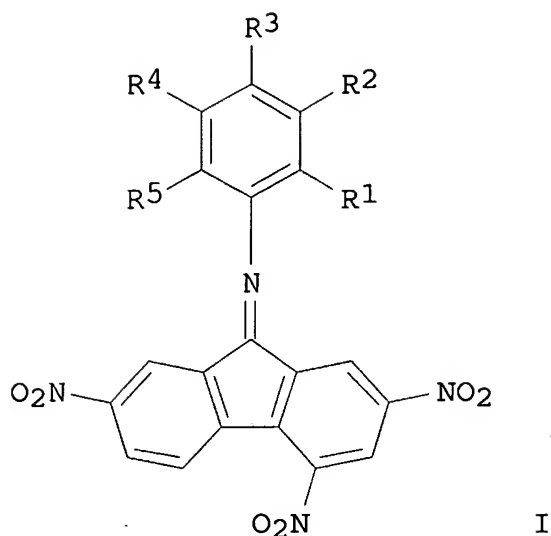
(electrophotog. photoreceptors contg. bisphenolic polycarbonates and)

L38 ANSWER 14 OF 38 HCA COPYRIGHT 2005 ACS on STN

124:274496 Electrophotographic photoreceptor with high sensitivity suitable for high speed imaging apparatus. Kamigaichi, Toshikazu; Muto, Nariaki; Kadoi, Mikio; Sumita, Keisuke; Saito, Sakae; Uchida, Masanori; Myamoto, Eiichi; Imanaka, Yukikatsu (Mita Industrial Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08050364 A2 19960220 Heisei, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-84188 19950410. PRIORITY: JP 1994-119188 19940531.

GI





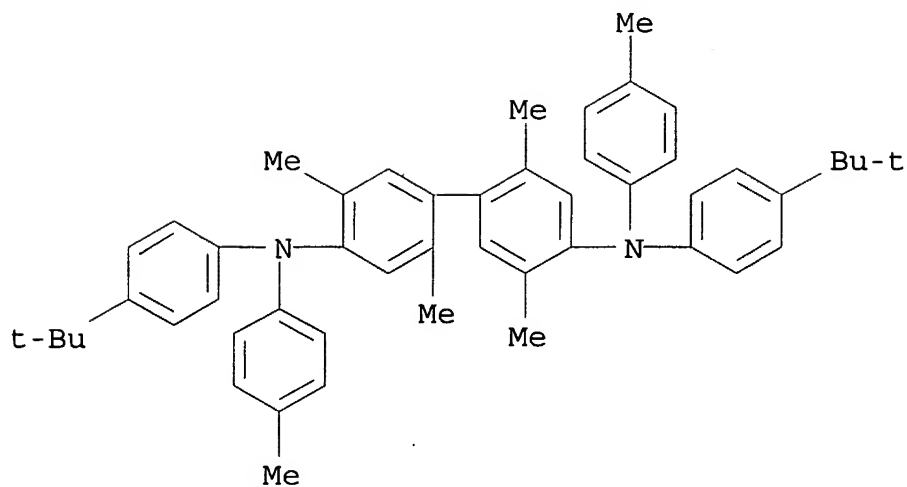
AB The org. photosensitive layer of the title photoreceptor contains a specific bisazo pigment(s) (selected from 5 specific bisazo pigments) as an charge generation agent and a trinitrofluorene imine deriv. I (R1-5 = H, alkyl, aryl, alkoxy, aralkyl, halo) as a charge transport agent. The above layer may contain a specific benzidine deriv. as a pos. hole transport agent.

IT 167377-41-5 167377-42-6 174303-35-6  
175616-12-3

(pos.-hole transport substances in org. photosensitive layer)

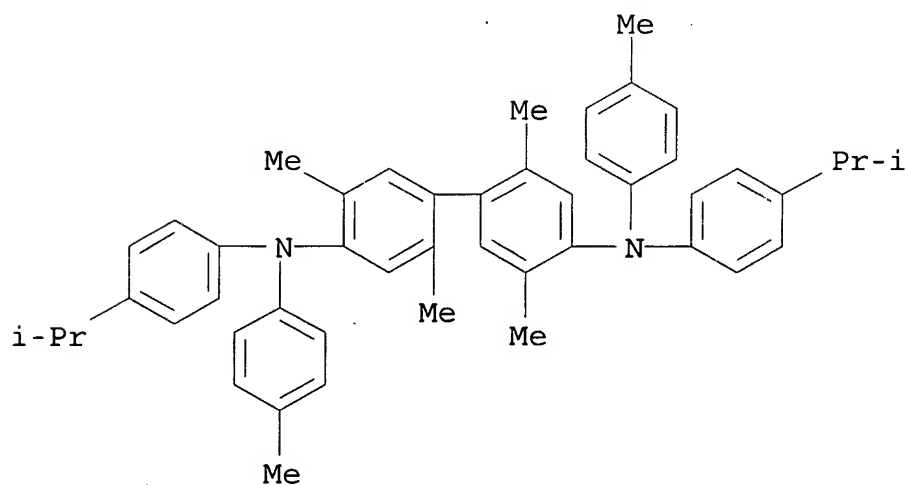
RN 167377-41-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-2,2',5,5'-tetramethyl-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



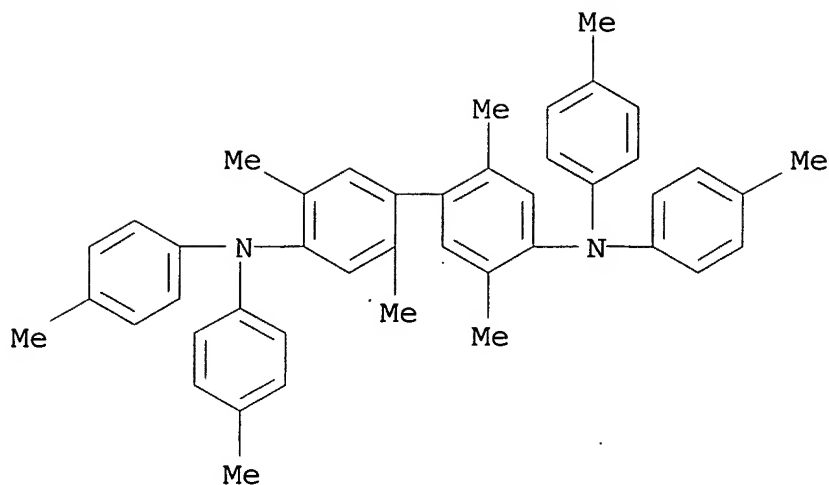
RN 167377-42-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-bis[4-(1-methylethyl)phenyl]-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

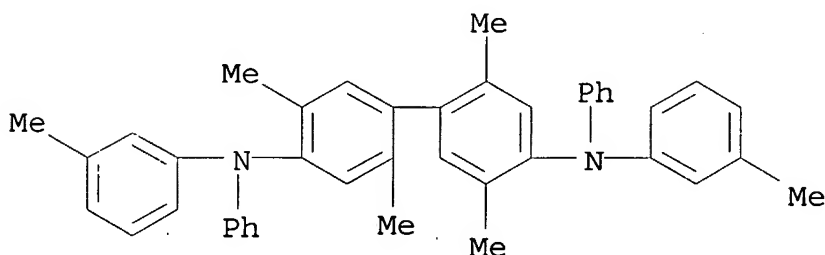


RN 174303-35-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



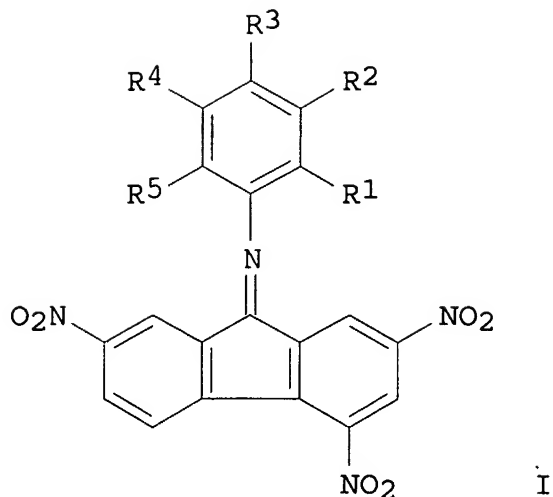
RN 175616-12-3 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IT 167377-41-5 167377-42-6 174303-35-6  
 175616-12-3  
 (pos.-hole transport substances in org. photosensitive layer)

L38 ANSWER 15 OF 38 HCA COPYRIGHT 2005 ACS on STN  
 124:274408 Electrophotographic material. Fukami, Toshiyuki; Nakamori, Hideo; Shiomi, Hiroshi; Kawaguchi, Hirofumi; Uegaito, Hisakazu; Muto, Nariaki; Kakui, Mikio; Sumida, Keisuke; Saito, Sakae; Uchida, Maki (Mita Industrial Co., Ltd., Japan). Eur. Pat. Appl. EP 690351 A2 19960103, 89 pp. DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI. (English). CODEN: EPXXDW. APPLICATION: EP 1995-303624 19950526. PRIORITY: JP 1994-119185 19940531.

GI



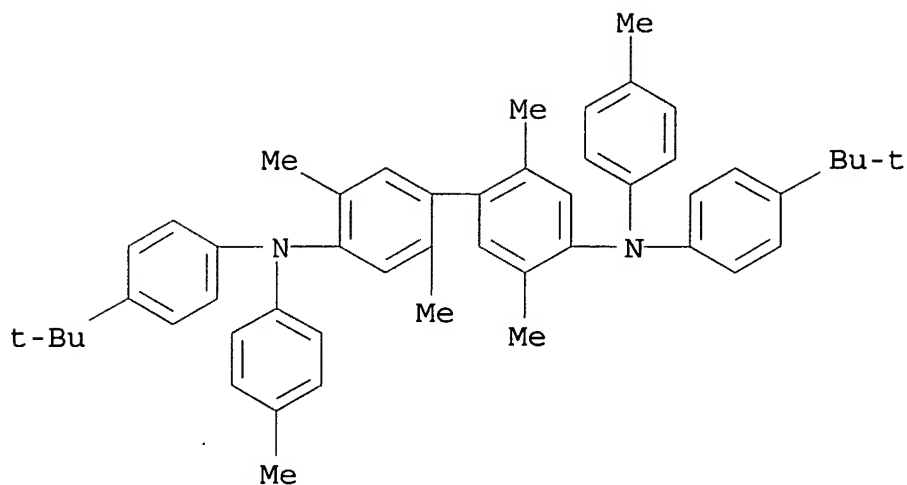
AB The present invention provides an electrophotog. material having an improved sensitivity in comparison with a conventional one, obtained by combining a trinitrofluorenoneimine deriv. represented by the formula I (R1-5 = H, alkyl, alkoxy, aryl which may contain a substituent or aralkyl which may contain a substituent, or halogen) as an electron-transferring material with a prescribed elec. charge-generating material or hole transferring material.

IT 167377-41-5 167377-42-6 174303-35-6  
174303-36-7

(electrophotog photoreceptors contg. electron-transporting phenyltrinitrofluorenoneimines and)

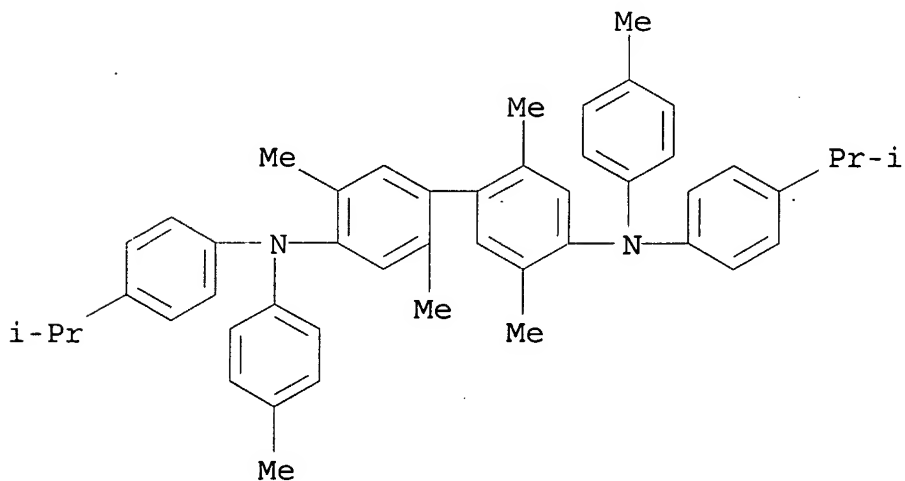
RN 167377-41-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-2,2',5,5'-tetramethyl-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



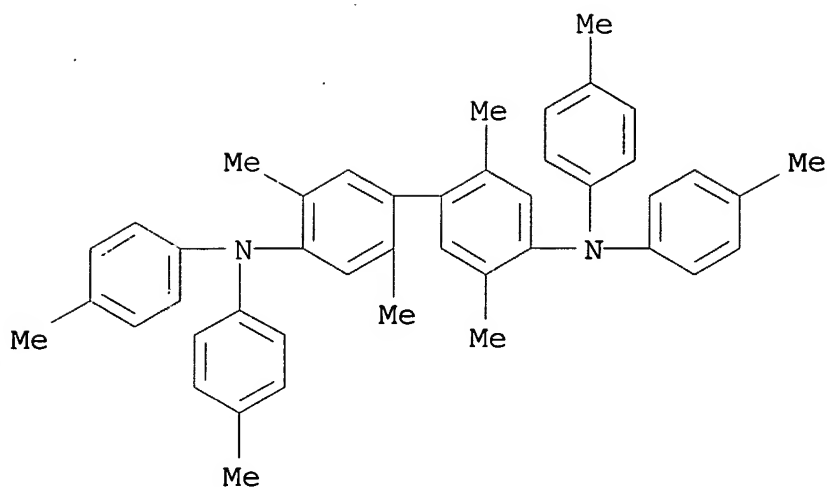
RN 167377-42-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-bis[4-(1-methylethyl)phenyl]-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



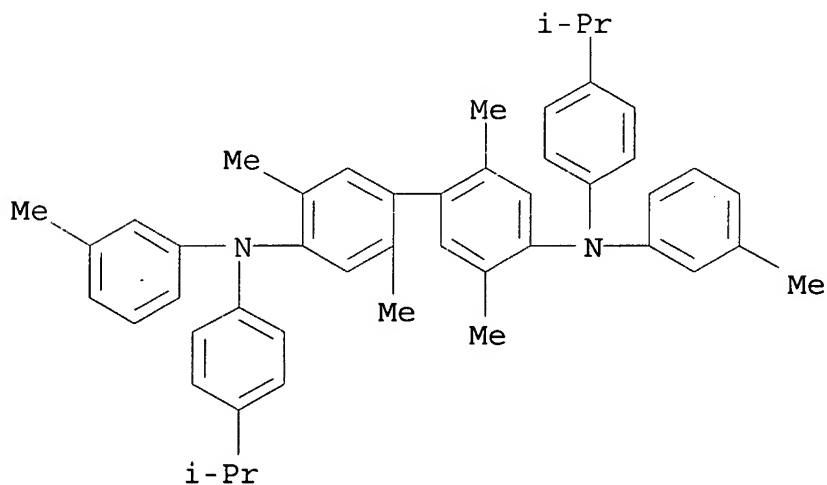
RN 174303-35-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 174303-36-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-bis[4-(1-methylethyl)phenyl]-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



IT 167377-41-5 167377-42-6 174303-35-6  
174303-36-7

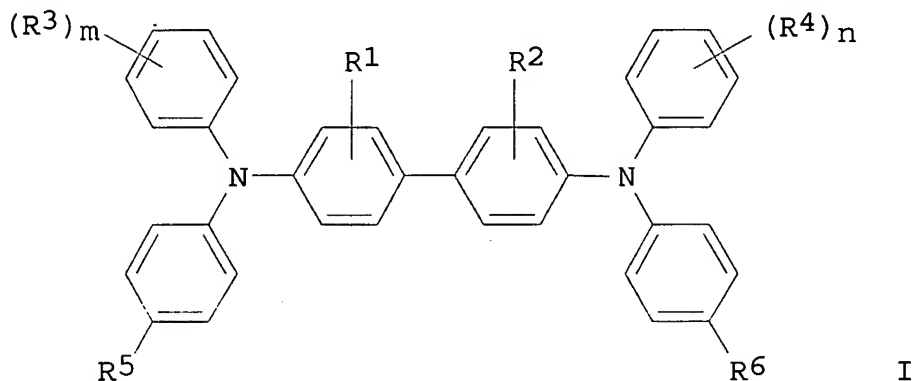
(electrophotog photoreceptors contg. electron-transporting  
phenyltrinitrofluorenoneimines and)

L38 ANSWER 16 OF 38 HCA COPYRIGHT 2005 ACS on STN

124:160365 Benzidine derivative and electrophotographic photoreceptor with excellent durability and heat-resistance. Mizuta, Yasushi; Tanaka, Masafumi; Muto, Nariaki; Fukami, Toshuki; Nakamori, Hideo; Kadoi, Mikio; Saito, Sakae; Shiomi, Hiroshi; Sumita, Keisuke; Uchida, Masanori (Mita Industrial Co Ltd, Japan). Jpn. Kokai Tokkyo

Koho JP 07324059 A2 19951212 Heisei, 41 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 1994-217539 19940912. PRIORITY: JP  
 1993-256089 19931013; JP 1993-256090 19931013; JP 1993-257207  
 19931014; JP 1993-257209 19931014; JP 1993-304437 19931203; JP  
 1993-304438 19931203; JP 1994-70422 19940408; JP 1994-70423  
 19940408; JP 1994-70424 19940408; JP 1994-70425 19940408; JP  
 1994-70426 19940408; JP 1994-70427 19940408.

GI



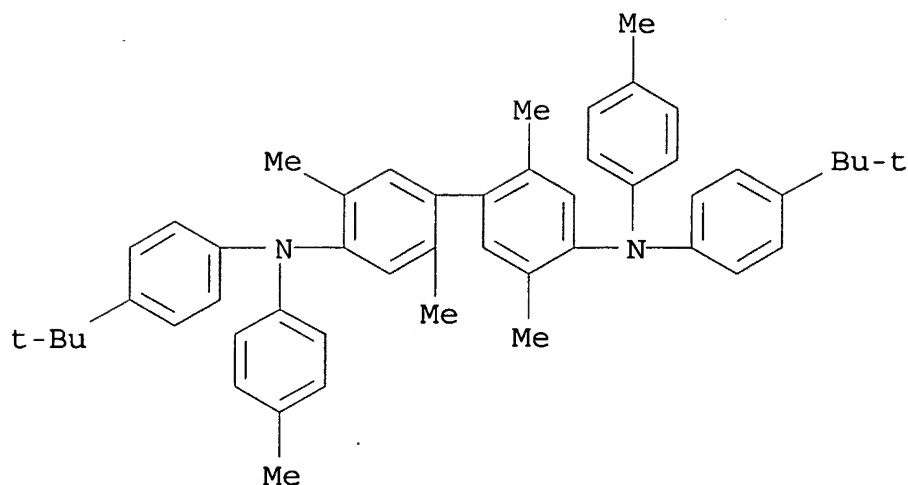
AB The title benzidine is represented by I [R1, R2 = H, alkyl; R3, R4 = alkyl, alkoxy, halo; R5, R6 = C3-5 alkyl, (substituted) aryl; m, n = 2, 3]. Similar derivs. are also claimed. The photoreceptor contains the benzidine in a photosensitive layer.

IT **167377-41-5P 167377-42-6P**

(benzidine derivs. for electrophotog. photoreceptor)

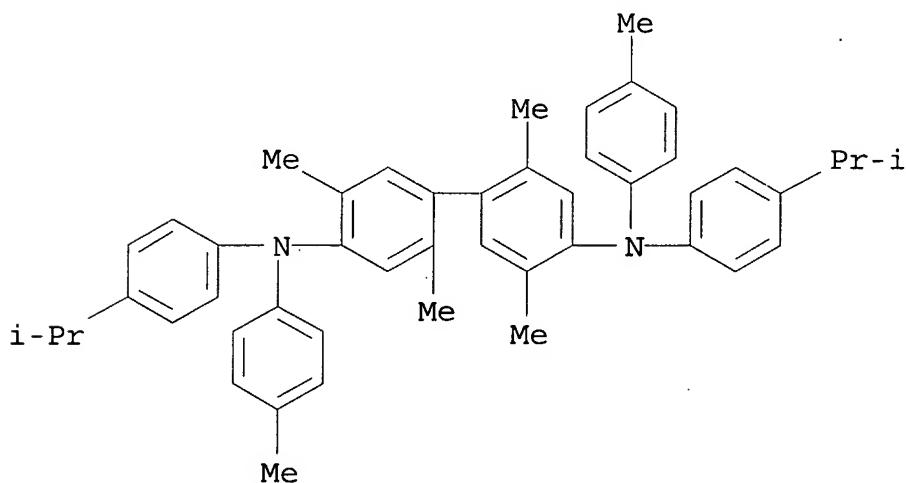
RN 167377-41-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-2,2',5,5'-tetramethyl-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 167377-42-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-bis[4-(1-methylethyl)phenyl]-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IT 167377-41-5P 167377-42-6P

(benzidine derivs. for electrophotog. photoreceptor)

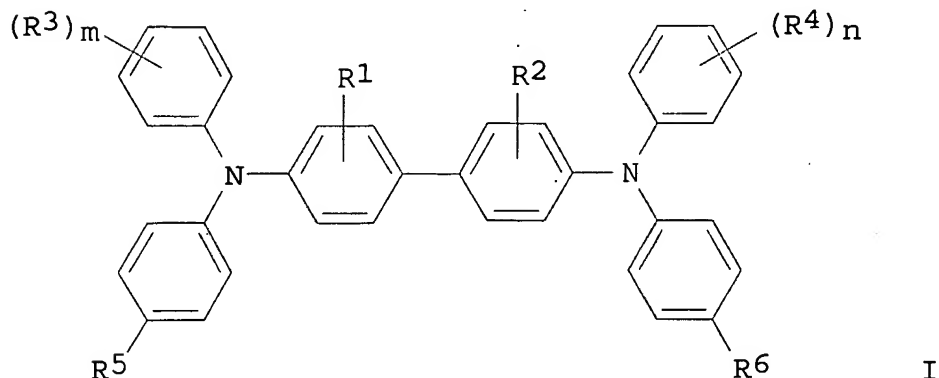
L38 ANSWER 17 OF 38 HCA COPYRIGHT 2005 ACS on STN

123:169334 Preparation of benzidine derivatives useful as electrophotosensitive material.. Mizuta, Yasufumi; Tanaka, Masashi; Muto, Nariaki; Fukami, Toshiyuki; Nakamori, Hideo; Kakui, Mikio; Saito, Sakate; Shiomi, Hiroshi; Sumida, Keisuke; Uchida, Maki (Mita Industrial Co., Ltd., Japan). Eur. Pat. Appl. EP 648737 A1 19950419, 62 pp. DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI. (English). CODEN: EPXXDW. APPLICATION: EP 1994-307440



19941011. PRIORITY: JP 1993-256090 19931013; JP 1993-257207 19931014; JP 1993-257209 19931014; JP 1993-304438 19931203; JP 1994-70422 19940408; JP 1994-70423 19940408; JP 1994-70424 19940408; JP 1994-70427 19940408.

GI



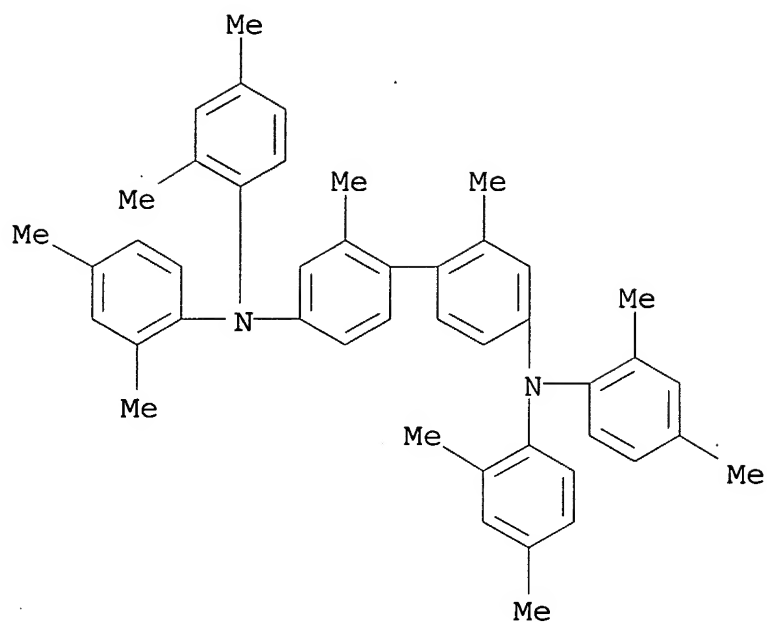
AB Title compds. I ( $R_1, R_2 = H, \text{alkyl}$ ;  $R_3, R_4 = \text{alkyl, alkoxy, halo}$ ;  $R_5, R_6 = C_3-5 \text{ alkyl, (substituted)aryl}$ ;  $m, n = 2, 3$ ), useful as charge transferring materials, are prep. I improve durability and heat resistance of a membrane while maintaining high hole transferring capability. Therefore, an electrophotosensitive material, which comprises a photosensitive layer contg. I, has high sensitivity and is superior in durability and heat resistance. N,N'-diacetyl-3,3'-dimethylbenzidine, 3,4-dimethyliodobenzene,  $K_2CO_3$  and Cu in nitrobenzene were refluxed to give after workup N,N'-bis(3,4-dimethylphenyl)-3,3'-dimethylbenzidine, to which was added 4-butyliodobenzene  $K_2CO_3$  and Cu in nitrobenzene to give I ( $R_1 = 3\text{-Me}$ ,  $R_2 = 3'\text{-Me}$ ,  $(R_3)_m = 3,4\text{-Me}_2 = (R_4)_n = 3,4\text{-Me}_2$ ,  $R_5 = R_6 = \text{Bu}$ ). High-temp. resistance test was demonstrated with I.

IT 167377-27-7P 167377-29-9P 167377-30-2P  
167377-31-3P 167377-32-4P 167377-41-5P  
167377-42-6P

(prepn. of benzidine deriv. useful as electrophotosensitive material)

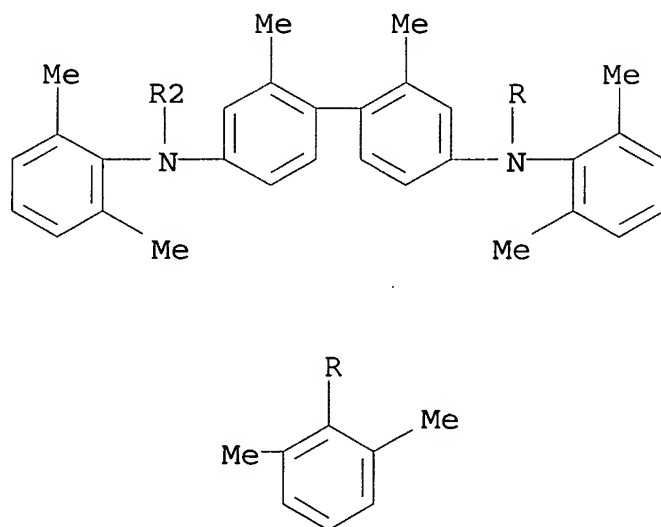
RN 167377-27-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'-tetrakis(2,4-dimethylphenyl)-2,2'-dimethyl- (9CI) (CA INDEX NAME)

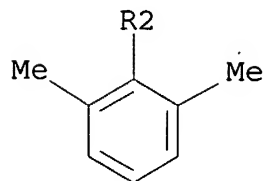


RN 167377-29-9 HCA  
CN [1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'-tetrakis(2,6-dimethylphenyl)-  
2,2'-dimethyl- (9CI) (CA INDEX NAME)

PAGE 1-A

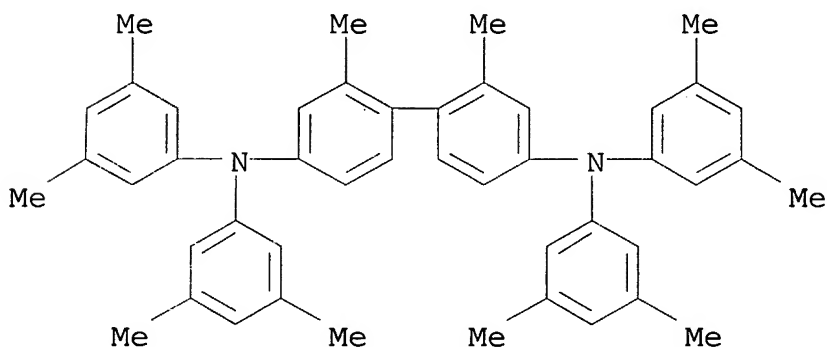


PAGE 2-A



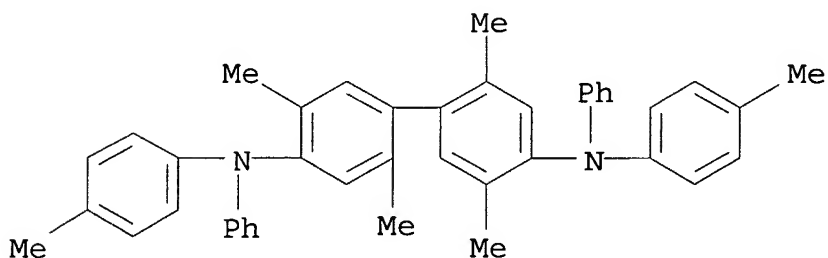
RN 167377-30-2 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'-tetrakis(3,5-dimethylphenyl)-2,2'-dimethyl- (9CI) (CA INDEX NAME)



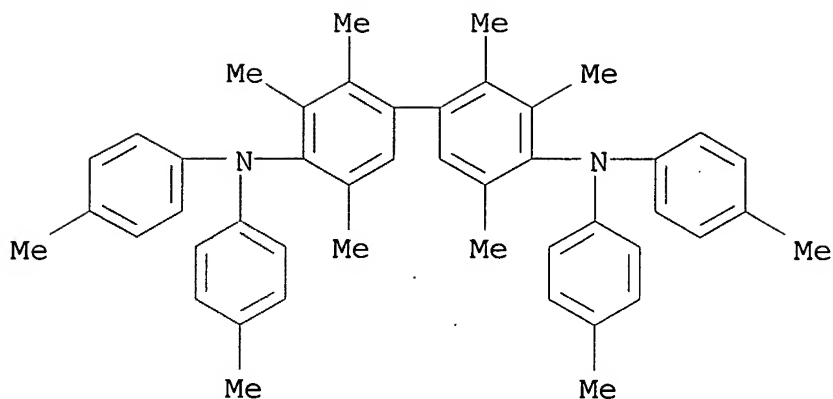
RN 167377-31-3 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)

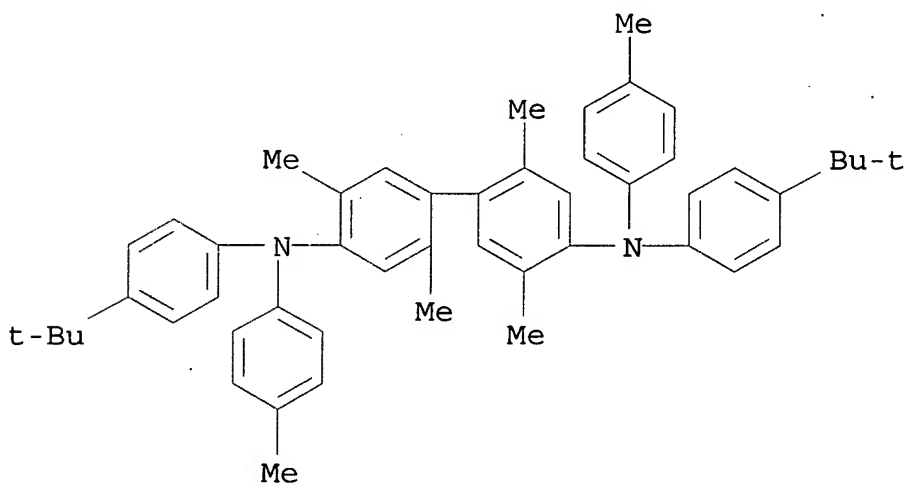


RN 167377-32-4 HCA

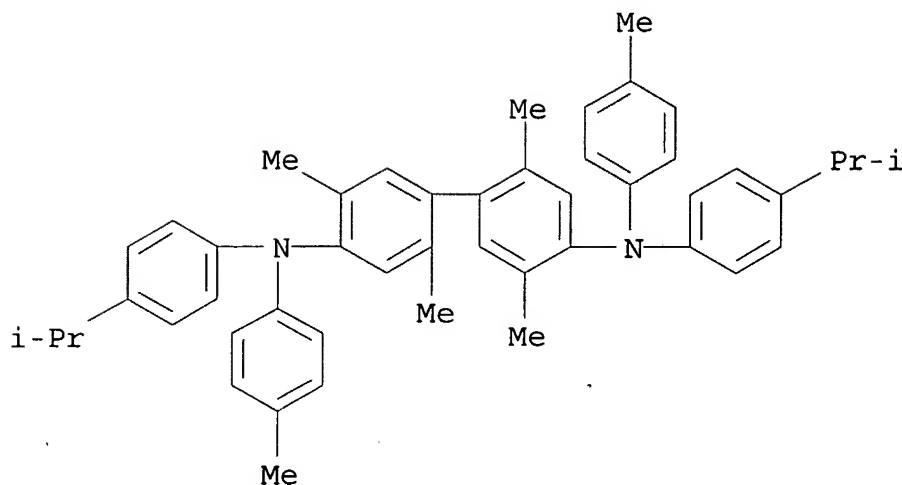
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',5,5'-hexamethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 167377-41-5 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-2,2',5,5'-tetramethyl-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 167377-42-6 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-bis[4-(1-methylethyl)phenyl]-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IT 167377-27-7P 167377-29-9P 167377-30-2P  
 167377-31-3P 167377-32-4P 167377-41-5P  
 167377-42-6P

(prepn. of benzidine deriv. useful as electrophotosensitive material)

L38 ANSWER 18 OF 38 HCA COPYRIGHT 2005 ACS on STN

122:42660 Electrophotographic photoreceptor containing charge transport substance. Hayata, Hirofumi; Hirose, Hisahiro (Konishiroku Photo Ind, Japan). Jpn. Kokai Tokkyo Koho JP 06011854 A2 19940121 Heisei, 40 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-167792 19920625.

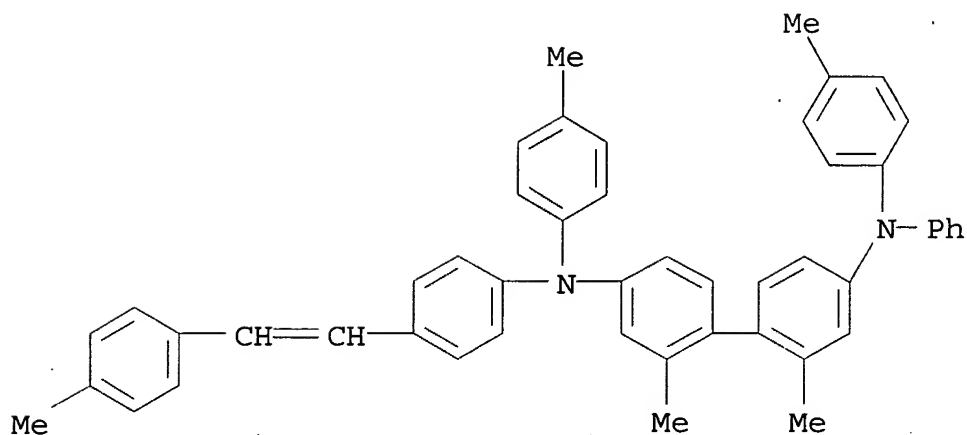
AB The title photoreceptor has a layer contg. a compd. (charge transport substance) A1A2N-A6-A7-N(A3)-(-A5-)n-CH:CA4R [A1-4 = (sub)aryl; A5-7 = (sub)arylene; R = H, alkyl, (sub)aryl; R and A4 may bond with other atoms to form a ring; n = 1, 2]. The photoreceptor shows high sensitivity and stability for repeated use.

IT 159918-74-8

(charge transport substance for high-sensitivity electrophotog. photoreceptor)

RN 159918-74-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(4-methylphenyl)-N-[4-[2-(4-methylphenyl)ethenyl]phenyl]-N'-phenyl- (9CI) (CA INDEX NAME)



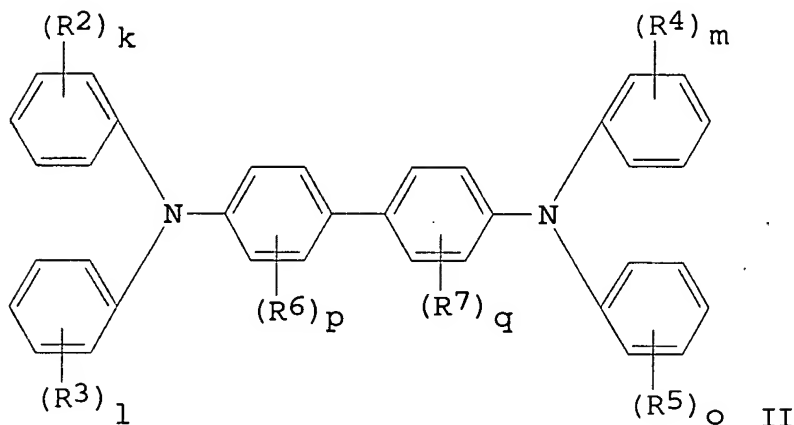
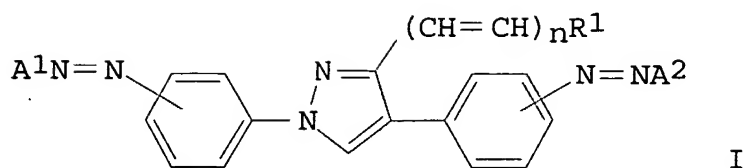
IT 159918-74-8

(charge transport substance for high-sensitivity electrophotog.  
photoreceptor)

L38 ANSWER 19 OF 38 HCA COPYRIGHT 2005 ACS on STN

121:267750 Electrophotographic photoreceptor with high sensitivity and  
durability. Sumita, Keisuke; Oki, Tsuneo (Mita Industrial Co Ltd,  
Japan). Jpn. Kokai Tokkyo Koho JP 06075401 A2 19940318  
Heisei, 31 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1992-226243 19920825.

GI



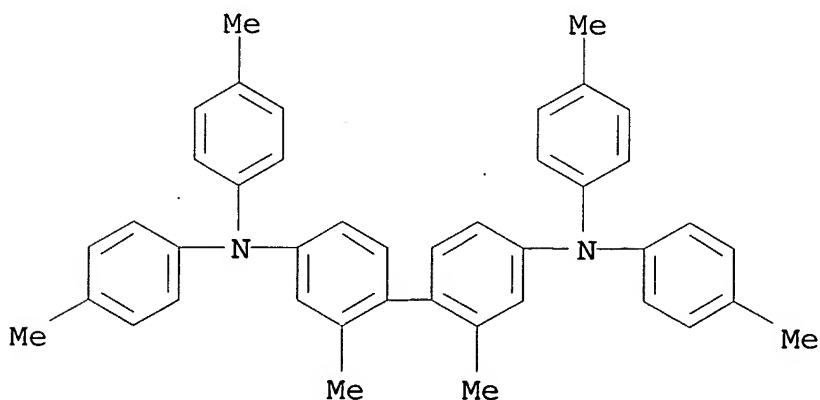
AB The title photoreceptor comprises charge generating material I ( A1-2 coupler residue; R1 = H, alkyl, aryl, heterocyclyl; n = 0, 1 ), charge transporting material II ( R2-7 = alkyl, alkoxy, halo, aryl, NO2, CN, alkylamino; p, q = 0-3; k, l, m, o = 0-2 ), and phosphorous acid deriv. etc. as stabilizers.

IT 80731-00-6

(charge transporting material in electrophotog. photoreceptor for high sensitivity and durability)

RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IT 80731-00-6

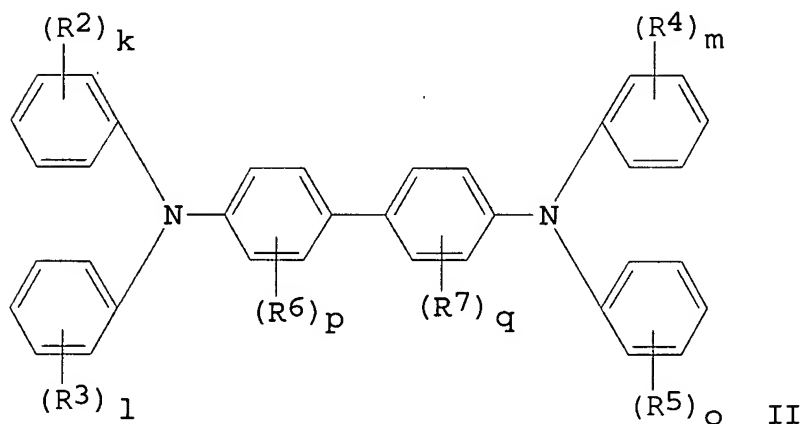
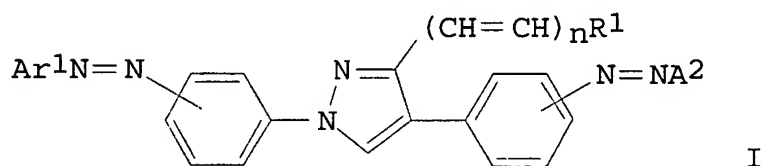
(charge transporting material in electrophotog. photoreceptor for high sensitivity and durability)

L38 ANSWER 20 OF 38 HCA COPYRIGHT 2005 ACS on STN

121:267749 High-sensitivity electrophotographic photoreceptor. Sumita, Keisuke; Oki, Tsuneo (Mita Industrial Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 06075402 A2 19940318 Heisei, 34 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-226244 19920825.

GI



AB The title photoreceptor utilizes a photosensitive layer contg. as charge-generating material a bisazo dye (I) [A1, A2 = coupler residue; R1 = H, alkyl, aryl, heterocyclyl; n = 0,1] and as charge-transporting material, the diamine (II) [R2, R3, R4 R5, R6, R7 = alkyl, alkoxy, halo, aryl, NO2, CN, alkylamino; p, q = 0-3; k, l, m, o = 0-2]. In addn., the photoreceptor contains as stabilizers a benzotriazole-type UV absorber, a specified dicarboxylic acid ester, a phosphite deriv., a piperidine-deriv. and a spiro-type amine deriv.

IT 80731-00-6

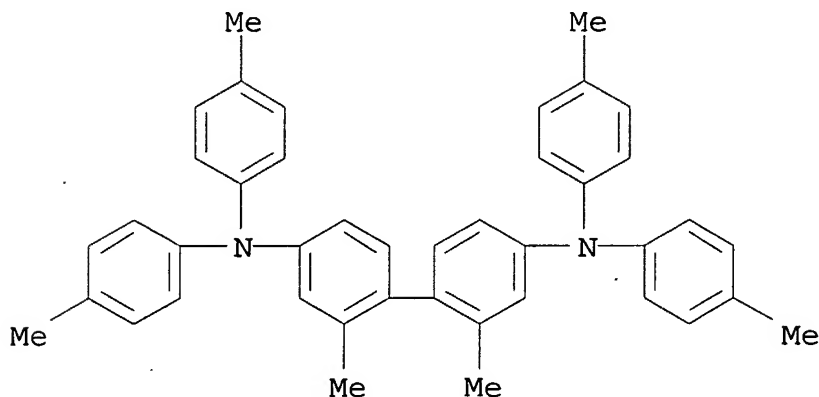
(charge-transporting material; High-sensitivity electrophotog.



photoreceptor)

RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IT 80731-00-6

(charge-transporting material; High-sensitivity electrophotog. photoreceptor)

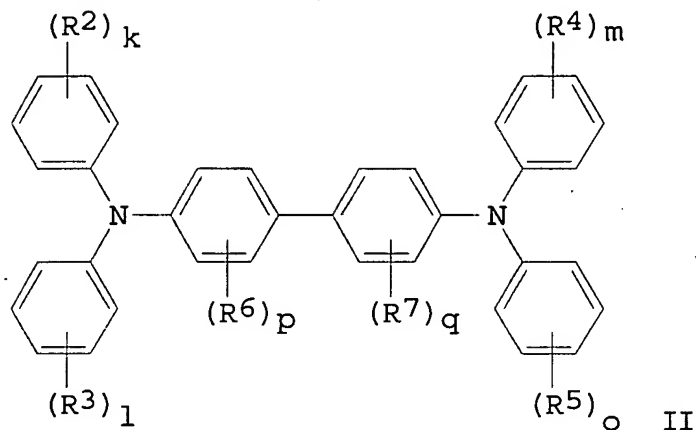
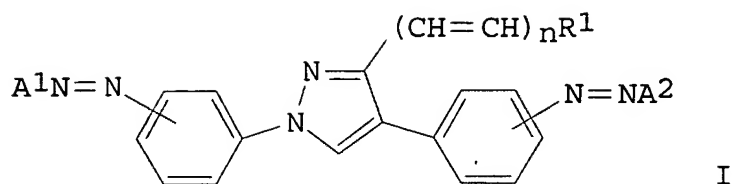
L38 ANSWER 21 OF 38 HCA COPYRIGHT 2005 ACS on STN

121:267741 Electrophotographic photoreceptor with high sensitivity and improved durability. Sumita, Keisuke; Oki, Tsuneo (Mita Industrial Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 06075403 A2

19940318 Heisei, 25 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1992-226245 19920825.

GI



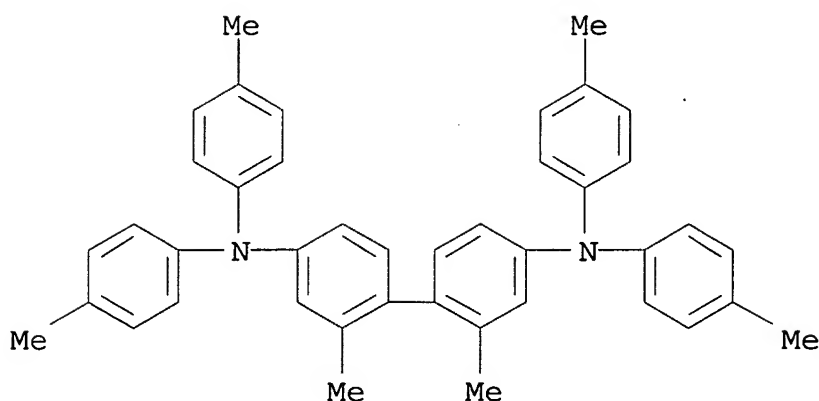
AB The title photoreceptor comprises I ( A1, A2 = coupler residue; R1 = H, alkyl, aryl, heterocycle; n = 0, 1 ) as a charge generating material, II ( R2-7 = alkyl, alkoxyl, halo, aryl, NO2, CN, alkylamino; p, q = 0-3; k, l, m, o = 0-2 ) as a charge transporting material, a claimed phenolic deriv. and a claimed dicarboxylic acid ester deriv. as stabilizers.

IT 80731-00-6

(charge transporting material for electrophotog. photoreceptor with high sensitivity and improved durability)

RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)

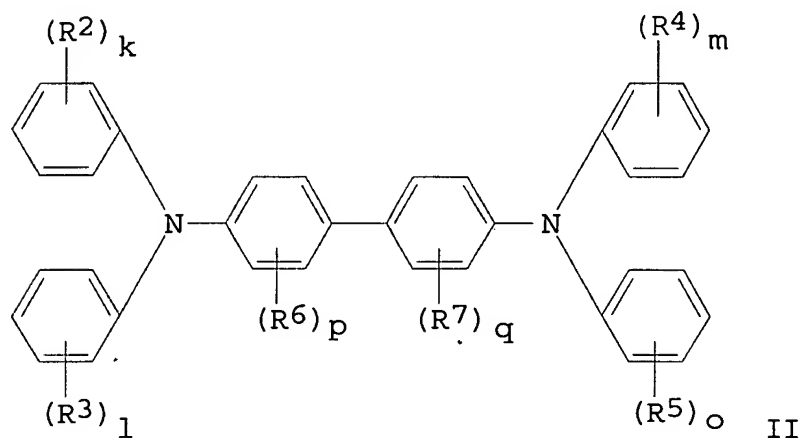
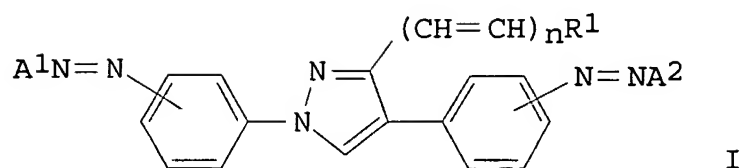


IT 80731-00-6

(charge transporting material for electrophotog. photoreceptor with high sensitivity and improved durability)

L38 ANSWER 22 OF 38 HCA COPYRIGHT 2005 ACS on STN  
119:259477 Electrophotographic material. Muto, Nariaki; Sumida, Keisuke; Iwasaki, Hiroaki; Oki, Tsuneo; Miyamoto, Eiichi; Hanatani, Yasuyuki; Sakai, Hiroaki (Mita Industrial Co., Ltd., Japan). Eur. Pat. Appl. EP 552740 A1 **19930728**, 118 pp. DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI. (English). CODEN: EPXXDW. APPLICATION: EP 1993-100805 19930120. PRIORITY: JP 1992-9326 19920122; JP 1992-111911 19920430; JP 1992-122218 19920514; JP 1992-195626 19920722; JP 1992-195627 19920722.

GI



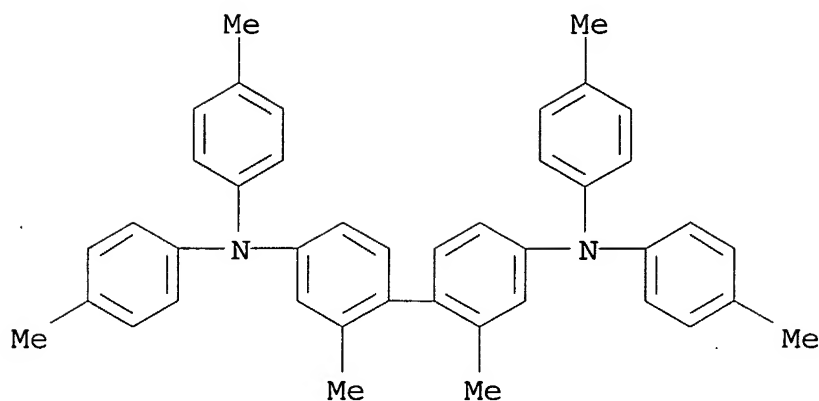
AB An electrophotog. material excellent in photosensitivity and durability comprises, on an elec. conductive substrate, a photosensitive layer contg. a disazo pigment represented by the formula I (A1, A2 = a coupler residue; R1 = H, alkyl, aryl, or heterocyclyl; n = 0 or 1) as a charge-generating agent and a diamine represented by the formula II (R2-7 = halogen, alkyl, alkoxy, aryl, cyano, or alkylamino; p, q = an integer of 0-3; k, l, m, o = an integer of 0-2) as a charge-transporting agent, wherein the disazo pigment described above may be used together with a perylene, anthanthrone, metal-free phthalocyanine, or imidazoloperylene pigment.

IT 80731-00-6

(charge-transporting agent, for electrophotog. photoreceptors contg. disazo pigment charge-generating agents)

RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IT 80731-00-6

(charge-transporting agent, for electrophotog. photoreceptors  
contg. disazo pigment charge-generating agents)

L38 ANSWER 23 OF 38 HCA COPYRIGHT 2005 ACS on STN

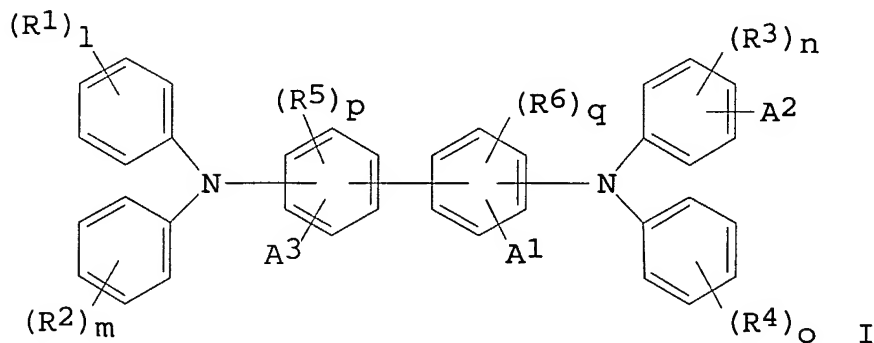
119:59651 Benzidine derivative for electrophotographic photoreceptor.

Hanatani, Yasuyuki; Iwasaki, Hiroaki (Mita Industrial Co., Ltd., Japan). Eur. Pat. Appl. EP 506492 A2 19920930, 26 pp.

DESIGNATED STATES: R: DE, FR, GB, IT, NL. (English). CODEN:

EPXXDW. APPLICATION: EP 1992-302801 19920330. PRIORITY: JP 1991-66767 19910329.

GI



AB A benzidine deriv. represented by the formula I ( $R_1$ -6 = H, halogen, alkyl, alkoxy, aryl, aralkyl, or heterocyclyl; 1, m, n, o, p, q = 0, 1 or 2; A1-3 = H or  $(CH=CH)_rCH=CR_7R_8$  where  $R_7, R_8$  = H, alkyl, alkoxy, aryl, aralkyl, or heterocyclyl, provided that  $R_7$  and  $R_8$  are not both

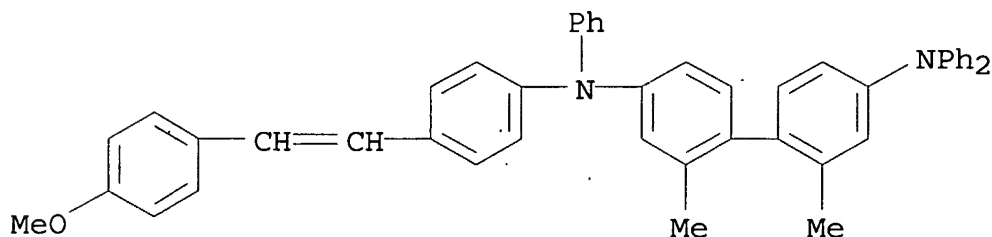
H; r = 0 or 1 and provided that A1, A2, and A3 are not H simultaneously and that .gtoreq.1 of A1 and A3 is H) is used as a charge-transporting agent for an electrophotog. photoreceptor.

IT 147845-68-9 147845-71-4

(charge-transporting agent, for electrophotog. photoreceptors)

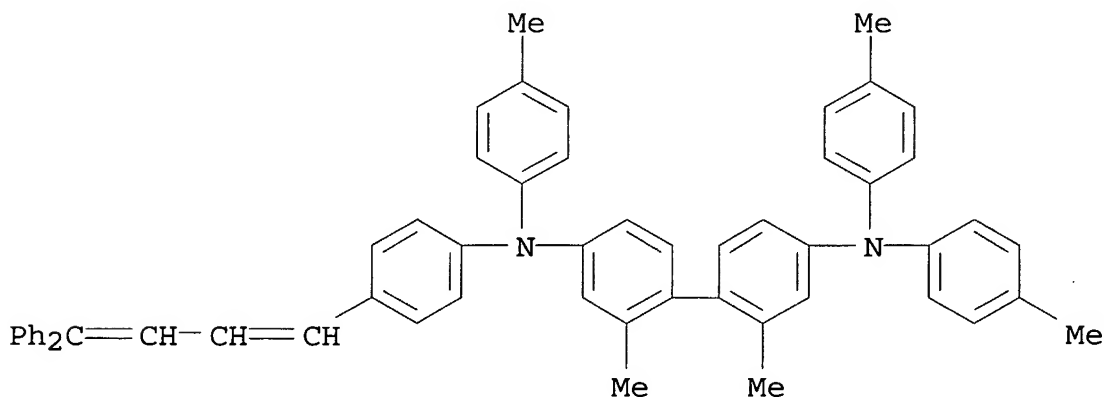
RN 147845-68-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N-[4-[2-(4-methoxyphenyl)ethenyl]phenyl]-2,2'-dimethyl-N,N',N'-triphenyl- (9CI)  
(CA INDEX NAME)



RN 147845-71-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N-[4-(4,4-diphenyl-1,3-butadienyl)phenyl]-2,2'-dimethyl-N,N',N'-tris(4-methylphenyl)- (9CI)  
(CA INDEX NAME)

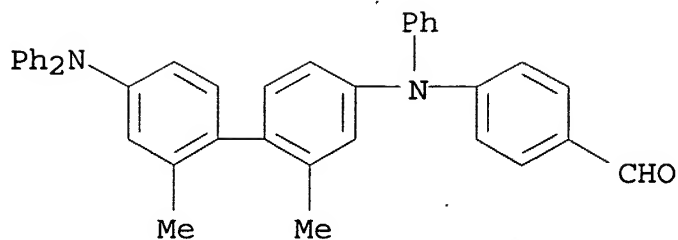


IT 147845-76-9 147845-80-5

(reaction of, in prepg. benzidine derivs. as charge-transporting agent for electrophotog. photoreceptors)

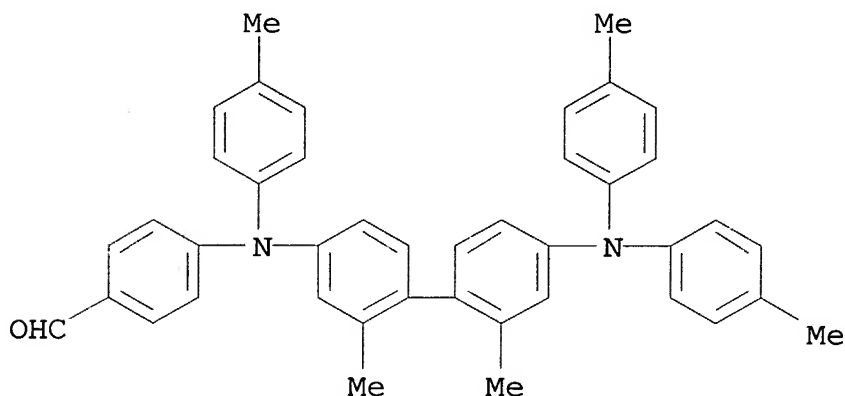
RN 147845-76-9 HCA

CN Benzaldehyde, 4-[[4'-(diphenylamino)-2,2'-dimethyl[1,1'-biphenyl]-4-yl]phenylamino]- (9CI) (CA INDEX NAME)



RN 147845-80-5 HCA

CN Benzaldehyde, 4-[[4'-[bis(4-methylphenyl)amino]-2,2'-dimethyl[1,1'-biphenyl]-4-yl](4-methylphenyl)amino]- (9CI) (CA INDEX NAME)



IT 147845-68-9 147845-71-4

(charge-transporting agent, for electrophotog. photoreceptors)

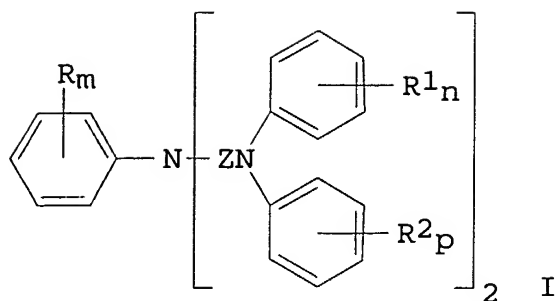
IT 147845-76-9 147845-80-5

(reaction of, in prepg. benzidine derivs. as charge-transporting agent for electrophotog. photoreceptors)

L38 ANSWER 24 OF 38 HCA COPYRIGHT 2005 ACS on STN

115:194199 Electrophotographic photoreceptor using triamine compound as charge-transporting agent. Shimada, Tomoyuki; Sasaki, Masaomi; Ariga, Tamotsu (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 03064760 A2 19910320 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1989-200696 19890802.

GI



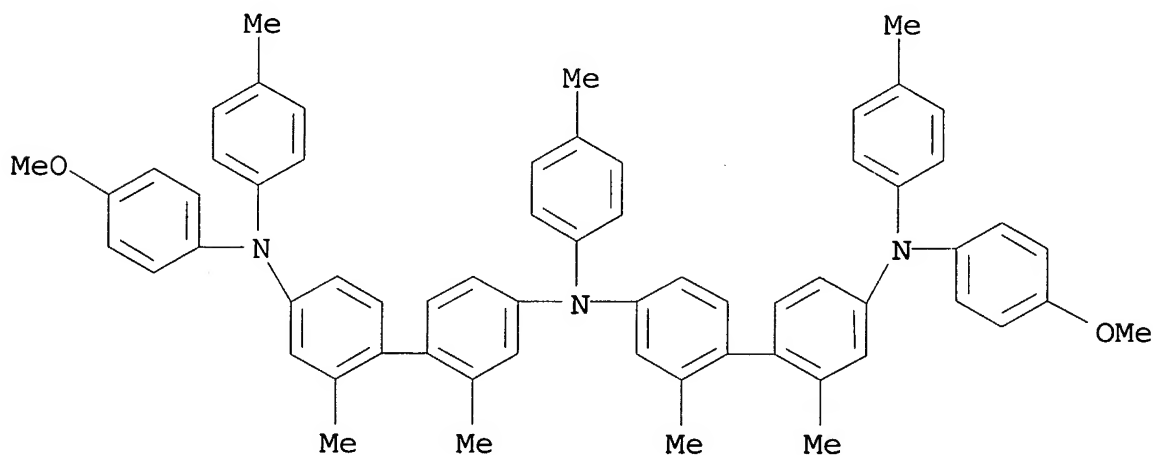
AB The title photoreceptor comprises an elec. conductive support with a coating of a photosensitive layer contg. .gtoreq.1 triamine compd. I [R-R2 = H, halo, cyano, (substituted) alkyl, alkoxy, aryloxy, alkylmercapto, methylenedioxy, methylenedithio, aryl; Z = (substituted) biphenylene; m, n, p = 1-5]. The photoreceptor shows good photosensitivity, thermal stability, and mech. strength. Thus, an Al vapor-deposited polyester film was coated with a charge-generating layer contg. Diane Blue and with a charge-transporting layer contg. p-MeC6H4N(p-C6H4C6H4NPh2-p)2 to give a photoreceptor.

IT 136603-93-5

(charge-transporting agent, electrophotog. photoreceptor using)

RN 136603-93-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-methoxyphenyl)-N'-[4'-[(4-methoxyphenyl)(4-methylphenyl)amino]-2,2'-dimethyl[1,1'-biphenyl]-4-yl]-2,2'-dimethyl-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



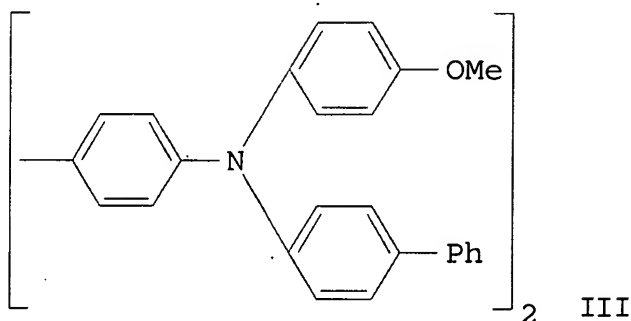
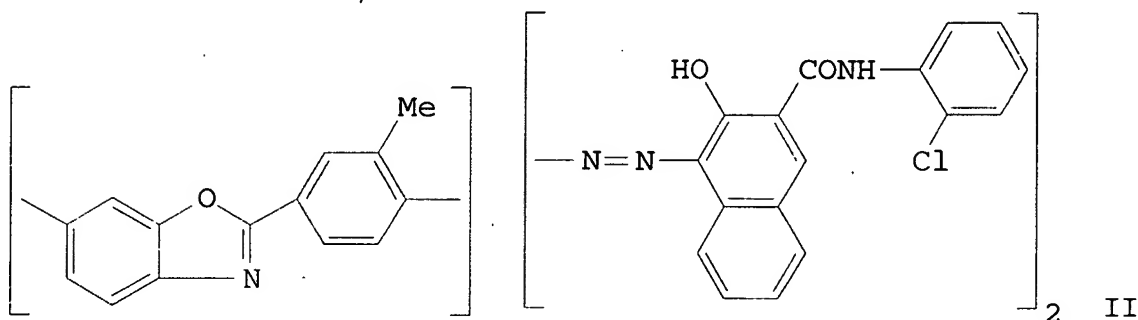
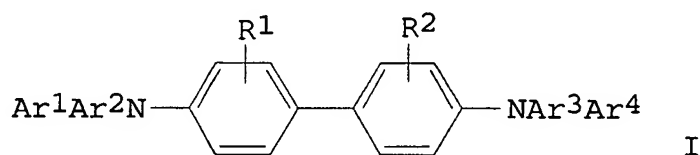
IT 136603-93-5

(charge-transporting agent, electrophotog. photoreceptor using)



L38 ANSWER 25 OF 38 HCA COPYRIGHT 2005 ACS on STN  
 114:256928 Electrophotographic photoreceptors. Kikuchi, Norihiro;  
 Kanamaru, Tetsuo; Senoo, Akihiro; Yashiro, Ryoji (Canon K. K.,  
 Japan). Jpn. Kokai Tokkyo Koho JP 02277071 A2 19901113  
 Heisei, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 1989-99461 19890419.

GI



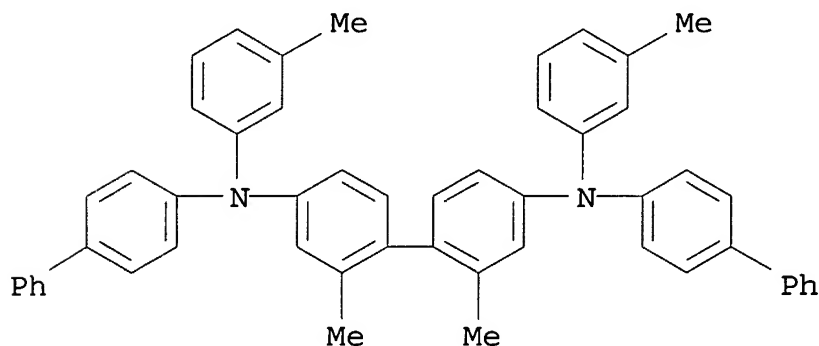
AB The photosensitive layer of the title photoreceptors contains biphenyls I [R<sup>1</sup>-2 = alkyl, alkoxy, halo, H; Ar<sup>1</sup>, Ar<sup>3</sup> = (substituted) Ph; Ar<sup>2</sup>, Ar<sup>4</sup> = (substituted) biphenyl]. These photoreceptors have stable charging performance. Thus, an Al sheet was coated with a charge-generating layer contg. a disazo dye II and butyral resin, and with a charge-transporting layer contg. III and polycarbonate. The obtained photoreceptor showed sensitivity (lux-s required for half-decay of charged voltage) 1.8; light voltage and dark voltage were -700 and -200 V, resp., which were -691 and -211 V after 10,000 repeated copying.

IT 134033-64-0

(charge-transporting agent, electrophotog. photoreceptors using)

RN 134033-64-0 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis([1,1'-biphenyl]-4-yl)-2,2'-dimethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



IT 134033-64-0

(charge-transporting agent, electrophotog. photoreceptors using)

L38 ANSWER 26 OF 38 HCA COPYRIGHT 2005 ACS on STN

114:33106 Electrophotographic sensitive material with pyrrolopyrrole and benzidine derivatives. Hanatani, Yasuyuki; Nakatani, Kaname (Mita Industrial Co., Ltd., Japan). U.S. US 4925759 A 19900515, 18 pp. Cont.-in-part of U.S. Ser. No. 276,578, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1989-399410 19891005. PRIORITY: JP 1987-301855 19871130; US 1988-276578 19881128.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title material, which is light resistant and has stable charging and photosensitive properties., comprises an elec. conductive support and a laminate- or single-type photosensitive layer contg. a pyrrolopyrrole deriv. I [R1 = (un)substituted aryl, (un)substituted aralkyl, or heterocyclyl; R3, R4 = H, alkyl, (un)substituted aryl] as a charge-generating agent, and a benzidine deriv. II (R5-R10 = H, lower alkyl, lower alkoxy, and halogen; l, m n, and o = 1-3, and p and q = 1 or 2) as a charge-transporting agent. Thus, an Al sheet was coated with a dispersion contg. 1,4-dithioketo-3,6-diphenylpyrrolo[3,4-c]pyrrole, the benzidine III, PCZ (bisphenol Z polycarbonate), and CH2Cl2 to give a photoreceptor, which was then charged to a surface potential of -6 kV and then exposed to a 10 lx W-lamp to measure the residual surface potential of -18 V after 0.15 s of lapse time. The E1/2 sensitivity of the photoreceptor was 7.33

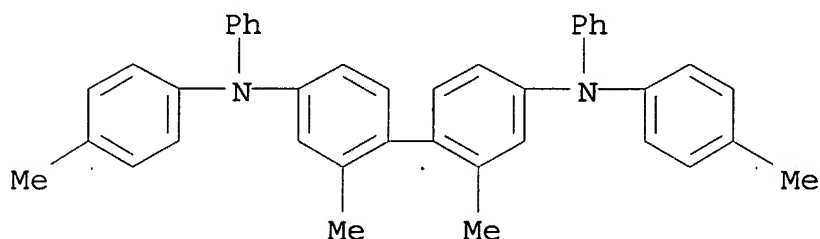
mJ/cm<sup>2</sup>.

IT 80730-93-4 80730-94-5 80731-00-6

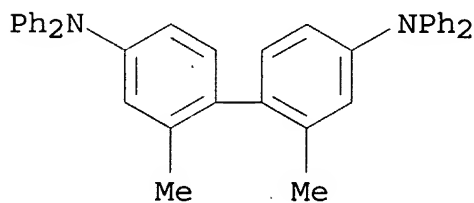
122738-17-4 122738-22-1

(electrophotog. photoreceptor contg. pyrrolopyrrole deriv.  
charge-generating agent and charge-transporting agent from)

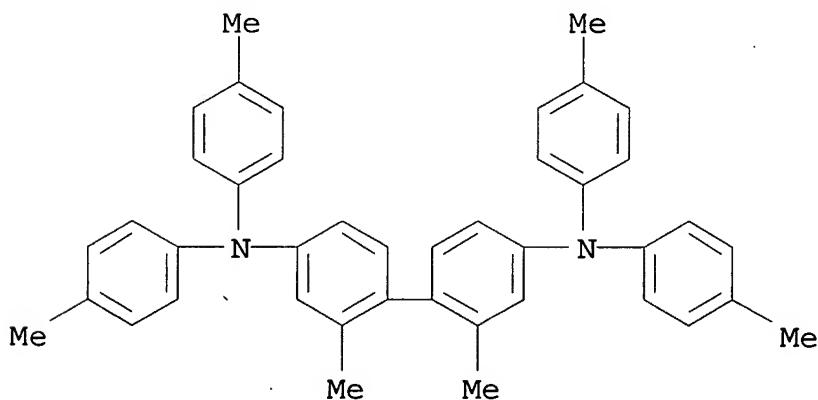
RN 80730-93-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(4-methylphenyl)-  
N,N'-diphenyl- (9CI) (CA INDEX NAME)

RN 80730-94-5 HCA

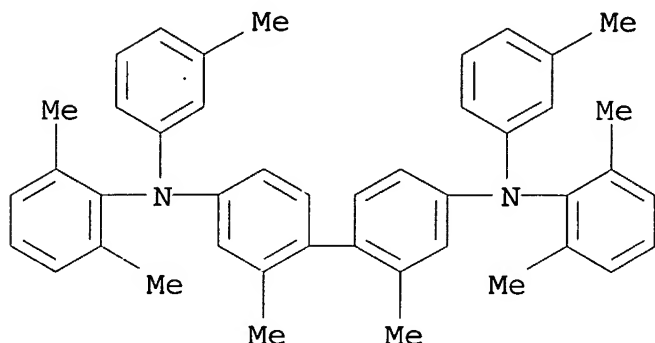
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetraphenyl-  
(9CI) (CA INDEX NAME)

RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-methylphenyl)-  
(9CI) (CA INDEX NAME)

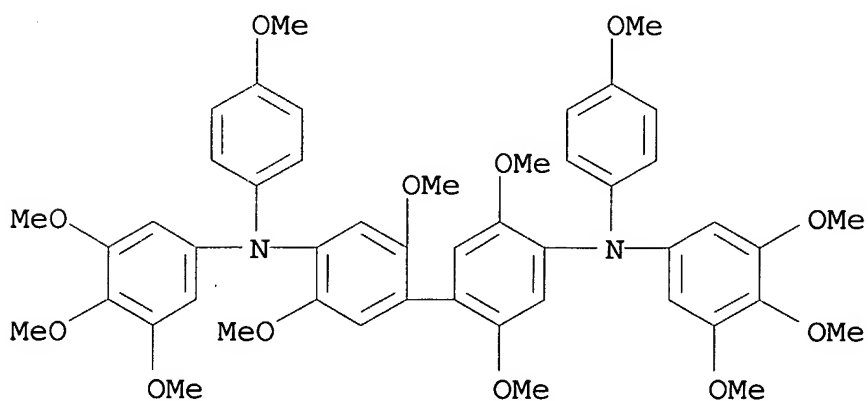
RN 122738-17-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(2,6-dimethylphenyl)-2,2'-dimethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 122738-22-1 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethoxy-N,N'-bis(4-methoxyphenyl)-N,N'-bis(3,4,5-trimethoxyphenyl)- (9CI) (CA INDEX NAME)



IT 80730-93-4 80730-94-5 80731-00-6

122738-17-4 122738-22-1

(electrophotog. photoreceptor contg. pyrrolopyrrole deriv.  
charge-generating agent and charge-transporting agent from)

L38 ANSWER 27 OF 38 HCA COPYRIGHT 2005 ACS on STN

113:162468 Electrophotographic photoreceptor with improved durability and stability. Nishiguchi, Toshihiko; Muto, Nariaki; Hanatani, Yasuyuki (Mita Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02037354 A2 19900207 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-187303 19880727.

AB In the title photoreceptor, the ionization potential of the charge-generating material is equal to or less than that of the pos.

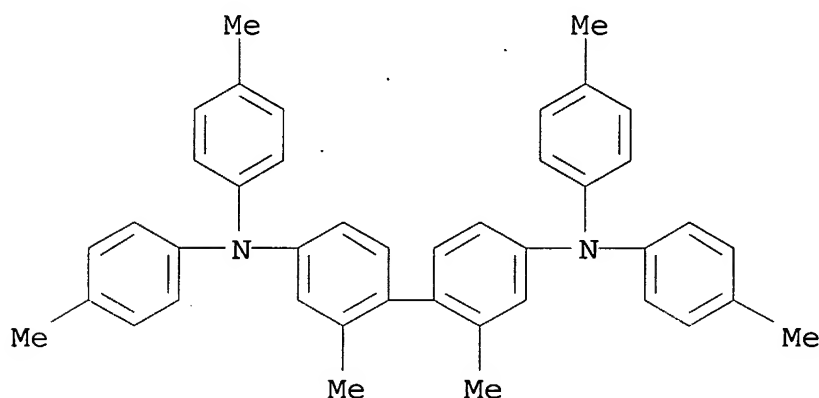
charge-transporting material. This photoreceptor shows improved durability and stability.

IT 80731-00-6

(charge-transporting material, electrophotog. photoreceptor contg., ionization potential in relation to)

RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



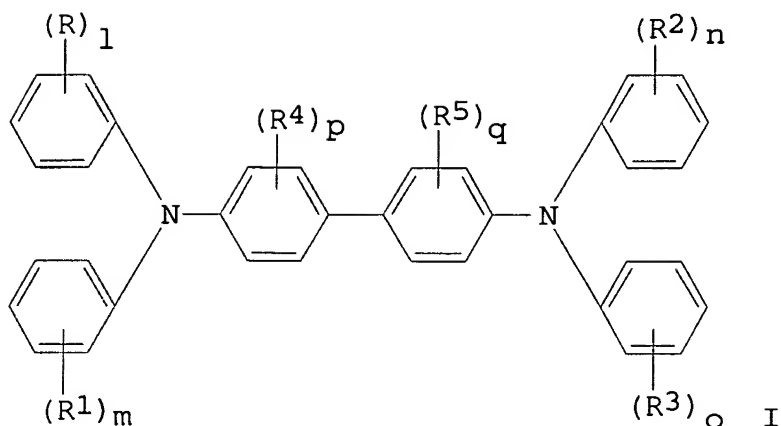
IT 80731-00-6

(charge-transporting material, electrophotog. photoreceptor contg., ionization potential in relation to)

L38 ANSWER 28 OF 38 HCA COPYRIGHT 2005 ACS on STN

111:244289 Charge-transporting substances for electrophotographic photoreceptors. Muto, Nariaki; Nakazawa, Susumu (Mita Industrial Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01142647 A2 19890605 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-301862 19871130.

GI



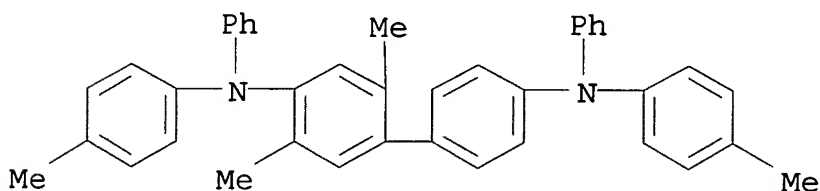
AB The electrophotog. photoreceptors have a photosensitive layer contg. benzidine derivs. (charge-transporting substances) of the formula I [ R-R5 = H, C1-4 alkyl, C1-4 alkoxy, halo; 1, m, n, o = 1-5; .gtoreq.1 of p, q = 2-4; R4 and R5 are not H at the same time; when p = q = 2 (or 3), R4 and R5 are at the 2,5- (or 2,3,6-) and 2',5'- (or 2',3',6'-) positions of the biphenyl skeleton] and metal-free phthalocyanine (or titanyl phthalocyanine). The photoreceptors show high sensitivity and low residual potential. Thus, an Al sheet was coated with a compn. contg. N,N'-dimethylperylene-3,4,9,10-tetracarboxylic diimide and S-Lec C (vinyl acetate-vinyl chloride copolymer), then coated with a compn. contg. I (R, R2 = 4-methyl; R1, R3 = H, R4 = 2,5-di-Me; R5 = 2',5'-di-Me) and bisphenol Z-type polycarbonate to give a high-quality photoreceptor.

IT 123875-70-7 123875-71-8 123875-72-9  
123875-73-0 123875-74-1 123875-75-2  
123901-55-3

(electrophotog. photoreceptor contg. charge-transporting agent from, for low residual potential)

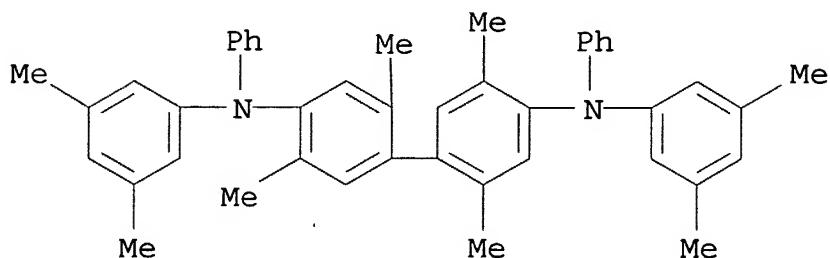
RN 123875-70-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,5-dimethyl-N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



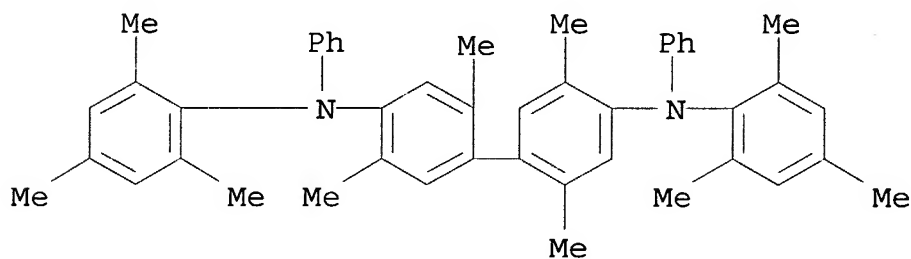
RN 123875-71-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3,5-dimethylphenyl)-2,2',5,5'-tetramethyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)



RN 123875-72-9 HCA

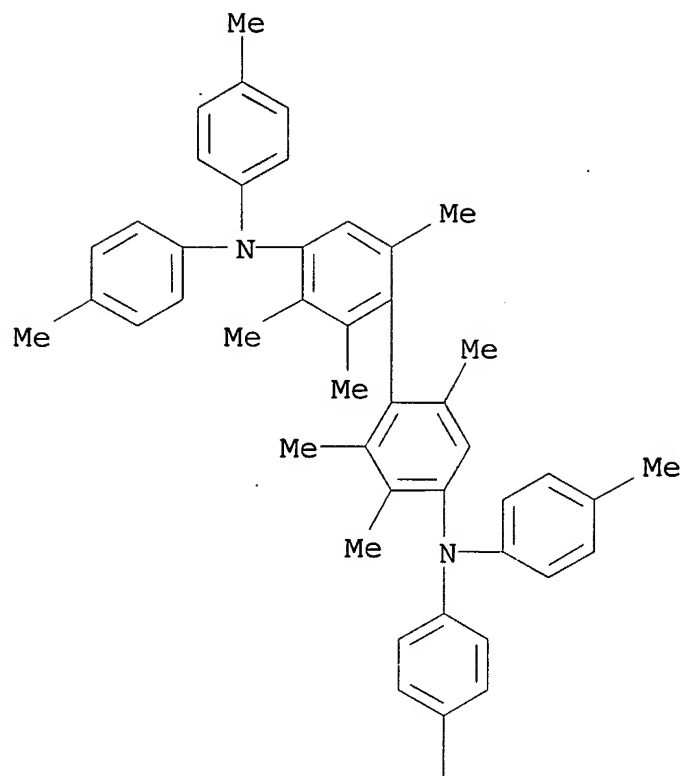
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethyl-N,N'-diphenyl-N,N'-bis(2,4,6-trimethylphenyl)- (9CI) (CA INDEX NAME)



RN 123875-73-0 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',6,6'-hexamethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)

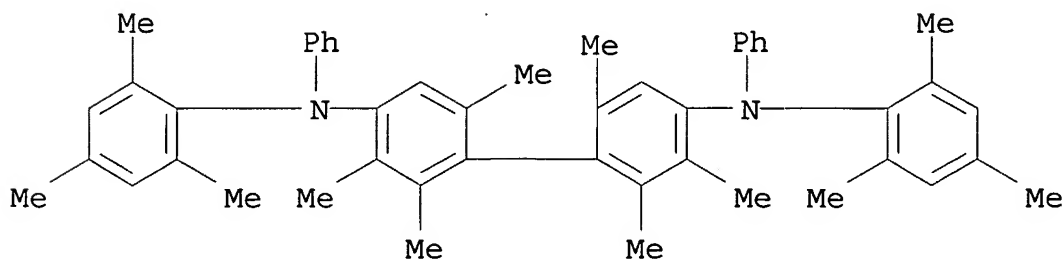
PAGE 1-A



PAGE 2-A

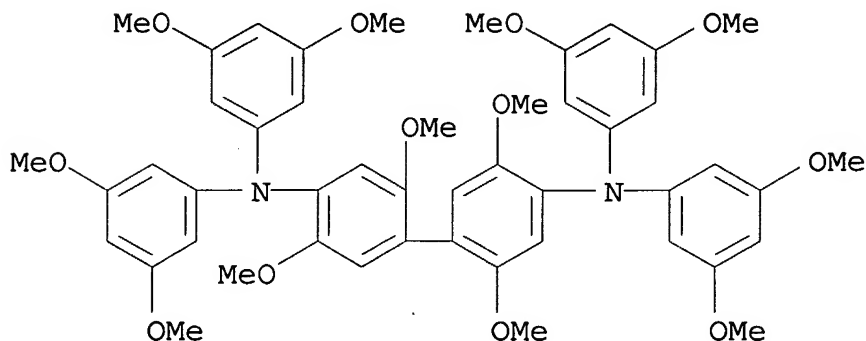


RN 123875-74-1 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',3,3',6,6'-hexamethyl-N,N'-  
 diphenyl-N,N'-bis(2,4,6-trimethylphenyl)- (9CI) (CA INDEX NAME)

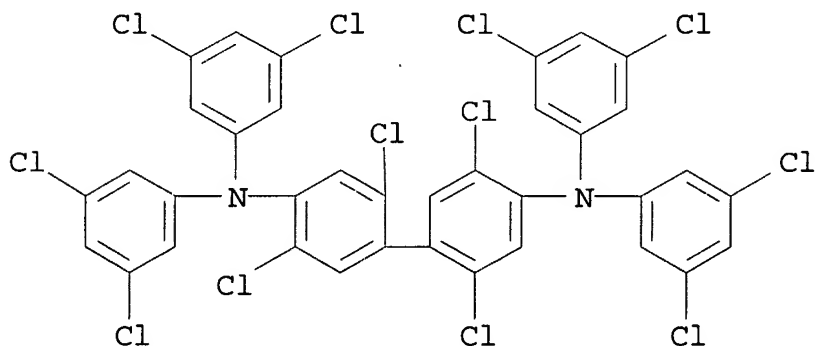




RN 123875-75-2 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N,N',N'-tetrakis(3,5-dimethoxyphenyl)-2,2',5,5'-tetramethoxy- (9CI) (CA INDEX NAME)



RN 123901-55-3 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetrachloro-N,N,N',N'-tetrakis(3,5-dichlorophenyl)- (9CI) (CA INDEX NAME)



IT 123875-70-7 123875-71-8 123875-72-9  
 123875-73-0 123875-74-1 123875-75-2  
 123901-55-3  
 (electrophotog. photoreceptor contg. charge-transporting agent  
 from, for low residual potential)

L38 ANSWER 29 OF 38 HCA COPYRIGHT 2005 ACS on STN  
 111:244275 Electrophotographic photoconductor containing pyrrolopyrrole.  
 Hanatani, Yasuyuki; Nakatani, Kaname (Mita Industrial Co., Ltd.,  
 Japan). Jpn. Kokai Tokkyo Koho JP 01142657 A2 19890605  
 Heisei, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 1987-301856 19871130.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

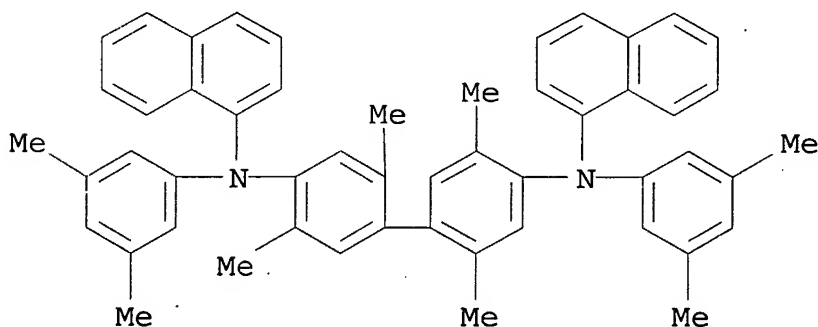
AB The title photoconductor, on an elec. conductive substrate, contains a pyrrolopyrrole I [R1-2 = (substituted) aryl, aralkyl, heterocycle; R3-4 = H, alkyl, (substituted) aryl] and a diamine II [R5-9 = H, lower alkyl, lower alkoxy, halo; l = 1, 2; m, n, o, p = 1, 2, 3; q = 1, 2]. The photoconductor shows reduced residual elec. potential. Thus, on an Al sheet, a compn. comprising 1,4-dithioketo-3,6-diphenylpyrrolo[3,4-c]pyrrole, S-Lec C, and THF was applied, dried, and coated with a PhH soln. contg. diamine III, and PCZ (bisphenol polycarbonates) to give the title photoconductor.

IT 123847-90-5 123847-92-7

(charge-transporting layer contg., for electrophotog. photoconductor, pyrrolopyrrole in)

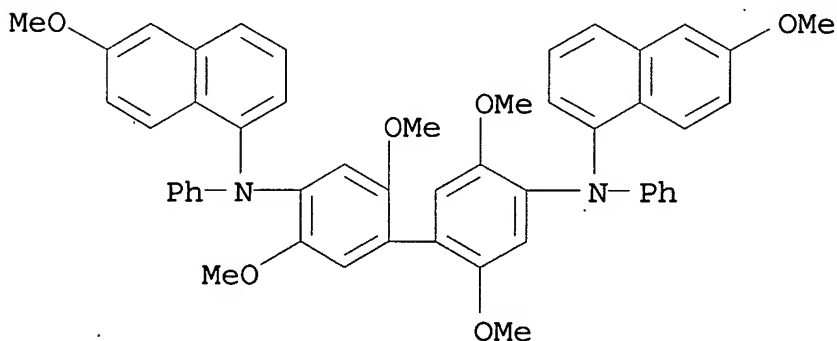
RN 123847-90-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(3,5-dimethylphenyl)-2,2',5,5'-tetramethyl-N,N'-di-1-naphthalenyl- (9CI) (CA INDEX NAME)



RN 123847-92-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethoxy-N,N'-bis(6-methoxy-1-naphthalenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IT 123847-90-5 123847-92-7

(charge-transporting layer contg., for electrophotog.  
photoconductor, pyrrolopyrrole in)

L38 ANSWER 30 OF 38 HCA COPYRIGHT 2005 ACS on STN

111:144079 Electrophotographic material containing pyrrolopyrrole and benzidine derivatives. Hanatani, Yasuyuki; Nakatani, Kaname (Mita Industrial Co., Ltd., Japan). Eur. Pat. Appl. EP 318916 A2 19890607, 42 pp. DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1988-119877 19881129. PRIORITY: JP 1987-301855 19871130.

GI For diagram(s), see printed CA Issue.

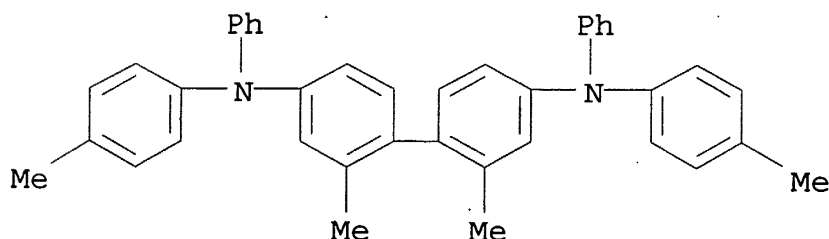
AB An electrophotog. material which has stable charging and photosensitive properties comprises an electroconductive substrate and a composite photosensitive layer contg. a pyrrolopyrrole deriv. having the general formula I [R1, R2 = (substituted) aryl, (substituted) aralkyl, heterocyclyl; R3, R4 = H, alkyl, (substituted) aryl] in a charge-generating sublayer and a benzidine deriv. having the general formula II (R5-10 = H, halon, lower alkyl, lower alkoxy; l, m, n, o = 1, 2, 3; p, q = 1, 2) in a charge-transporting sublayer. Thus, an Al sheet was coated with a compn. comprising 1,4-dithioketo-3,6-diphenylpyrrolo[3,4-c]pyrrole 2, vinyl acetate-vinyl acetate copolymer 1, and THF 10.7 parts, dried to give a charge-generating layer, overcoated with another compn. comprising II (R6, R8, R9, R10 = H; R5, R7 = 3-Me) 8, bisphenol Z 10, and C6H6 90 parts, and dried to give a charge-transporting layer. The resulting electrophotog. photoreceptor was charged to a surface potential of -680 V and exposed to a 10-lx W lamp for 0.15 s to reduce the surface potential to -18 V. The E1/2 sensitivity of the photoreceptor was 7.24 .mu.J/cm2.

IT 80730-93-4 80730-94-5 122738-17-4  
122738-22-1

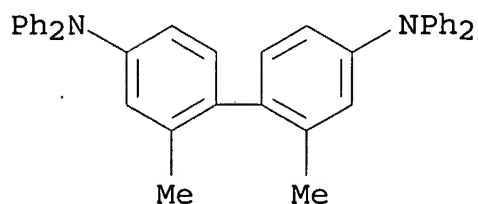
(charge-transporting layer contg., for electrophotog.  
photoconductor contg. charge-generating layer contg.  
pyrrolopyrrole deriv.)

RN 80730-93-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)

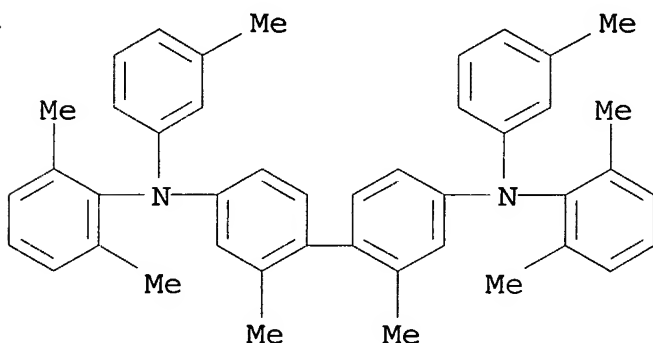


RN 80730-94-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetraphenyl-  
(9CI) (CA INDEX NAME)

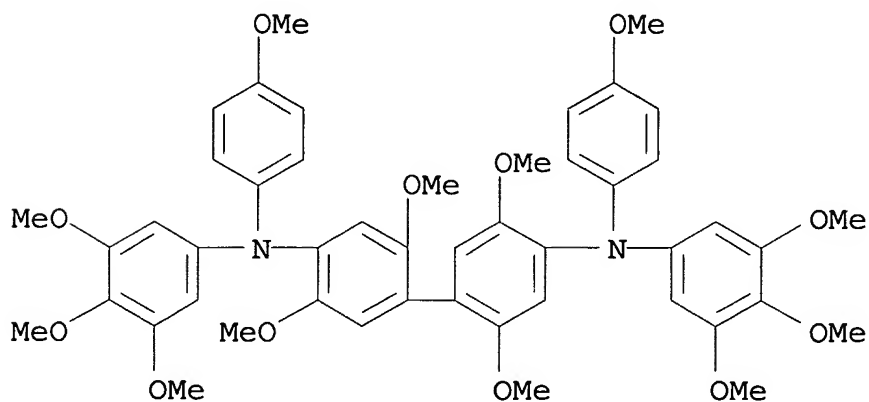
RN 122738-17-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis(2,6-dimethylphenyl)-2,2'-dimethyl-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 122738-22-1 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2',5,5'-tetramethoxy-N,N'-bis(4-methoxyphenyl)-N,N'-bis(3,4,5-trimethoxyphenyl)- (9CI) (CA INDEX NAME)



IT 80730-93-4 80730-94-5 122738-17-4  
122738-22-1

(charge-transporting layer contg., for electrophotog.  
photoconductor contg. charge-generating layer contg.  
pyrrolopyrrole deriv.)

L38 ANSWER 31 OF 38 HCA COPYRIGHT 2005 ACS on STN

111:105752 Electrophotographic photoconductors. Ito, Hiroshi (Seiko Epson Corp., Japan). Jpn. Kokai Tokkyo Koho JP 01066659 A2  
19890313 Heisei, 3 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1987-223634 19870907.

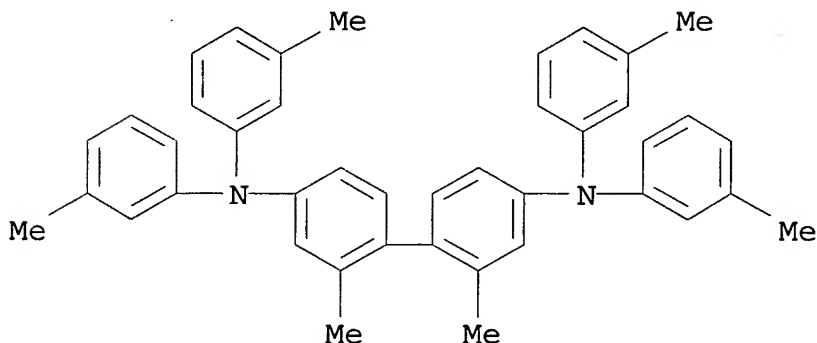
AB The charge-transporting layers (CTL) of the photoconductors contains a charge-transporting agent, a monomer for condensation polymn., and a resin material. These mixts. produce polymer mixts. with chains intertwined with each other and provide an abrasion-resistant layer with high printability. Thus, a 15-.mu.m-thick CTL was formed by coating a substrate with a charge-generating layer with a soln. contg. N,N,N',N'-tetra(m-tolyl)-2,2'-dimethylbenzidine, a single-component epoxy resin, a polycarbonate resin, and solvents and cured by heat. After 10,000 copying cycles by using this photoconductor, 96.8% of the initial CTL thickness and 96.5% of initial chargeability were retained vs. 94.7 and 90.3%, resp., for a photoconductor using only a polycarbonate resin as the binder for the CTL.

IT 80730-98-9

(electrophotog. photoconductor with charge-transporting layer  
contg. resin-monomer mixt. binder and, for high printability)

RN 80730-98-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



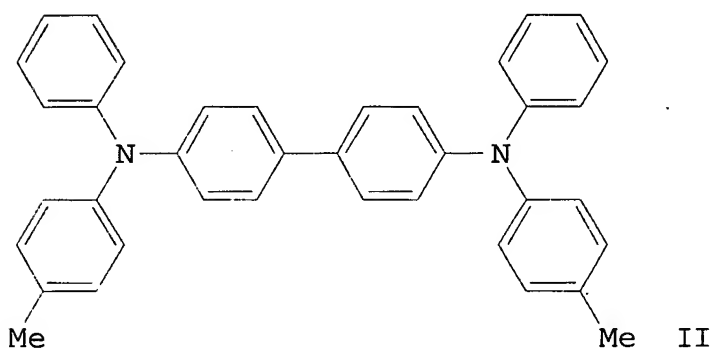
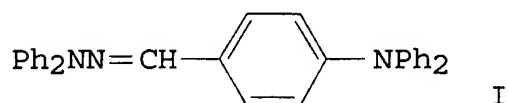
IT 80730-98-9

(electrophotog. photoconductor with charge-transporting layer  
contg. resin-monomer mixt. binder and, for high printability)

L38 ANSWER 32 OF 38 HCA COPYRIGHT 2005 ACS on STN

108:13843 Electrophotographic materials. Yokoya, Hiroaki; Sano, Kenji; Tachikawa, Hiromichi; Sato, Hideo (Fuji Photo Film Co., Ltd., Japan). Ger. Offen. DE 3638418 A1 **19870514**, 10 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1986-3638418 19861111. PRIORITY: JP 1985-252516 19851111.

GI



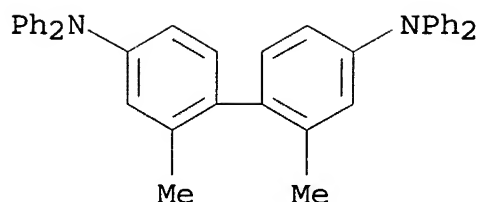
AB Transparent and flexible electrophotog. materials for use in microfilming are composed of a conductive support and a photosensitive layer contg. .gtoreq.1 hydrazone and .gtoreq.1 benzidine deriv. A PET film with a Pd coating was coated with a soln. contg. I, II, a thiopyrylium salt sensitizer, CH<sub>2</sub>Cl<sub>2</sub>, and ethylene chloride and then dried to give a transparent electrophotog. material showing no deposition of crystals after 3 mo at 50.degree. and having excellent electrophotog. characteristics.

IT **80730-94-5**

(electrophotog. plate with photosensitive layer contg. hydrazone and, transparent and flexible, for microfilming)

RN 80730-94-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



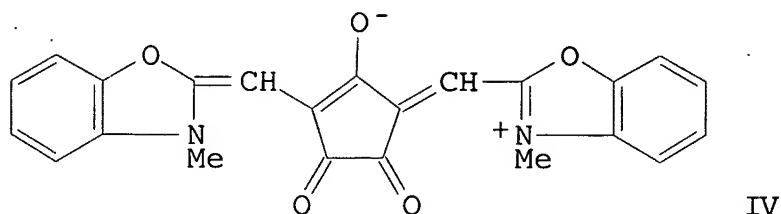
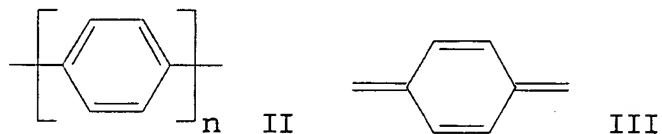
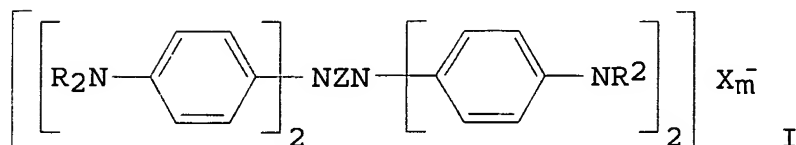
IT 80730-94-5

(electrophotog. plate with photosensitive layer contg. hydrazone and, transparent and flexible, for microfilming)

L38 ANSWER 33 OF 38 HCA COPYRIGHT 2005 ACS on STN

104:234361 Optical information recording medium. Sato, Tsutomu; Umehara, Masaakira; Abe, Michiharu; Oba, Hideaki; Ueda, Yutaka (Ricoh Co., Ltd., Japan). Brit. UK Pat. Appl. GB 2155811 A1 19851002, 18 pp. (English). CODEN: BAXXDU. APPLICATION: GB 1985-3022 19850206. PRIORITY: JP 1984-18222 19840206; JP 1984-91922 19840510.

GI



IV

AB A laser optical recording material is comprised of a plastic substrate and an org. recording layer and, optionally, an underlayer and/or a protective layer in which .gtoreq.1 of the layers contains

a compd. of the formula I (R = H, lower alkyl; Z = II where n = 1, 2, III; X = acid anion; m = 0, 1, 2 being 2 when Z = II; each of the arom. rings in the compd. may be substituted with .gtoreq.1 halogen, lower alkyl, lower alkoxy, or OH). A polymethine compd. may also be contained in the recording layer as a coloring material. Thus, a 1,2-dichloroethane soln. of a 1:1 mixt. of I (R = Et; Z = phen-1,4-ylene; X-m = BF<sub>4</sub><sup>-</sup>) and IV was spin-coated on a 1.2 mm poly(Me methacrylate) support to give a recording layer (700 .ANG. thick). The resultant laser recording material required a writing power of 3.3 mW, had a reflectivity of 25.5%, and exhibited a C/N ratio of 52 dB vs. 3.5 mW, 20.9%, and 46 dB, resp., after light irradiation for 50 h.

IT 102279-05-0

(laser optical recording layer contg. polymethine coloring agent and)

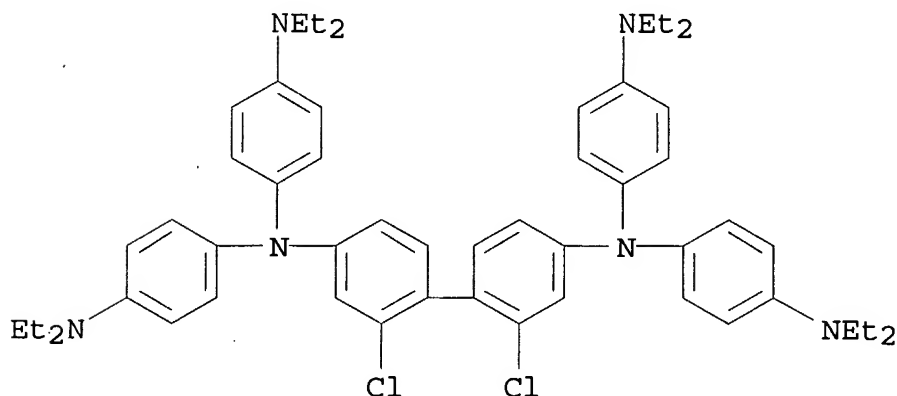
RN 102279-05-0 HCA

CN Arsenate(1-), hexafluoro-, hydrogen, compd. with  
2,2'-dichloro-N,N,N',N'-tetrakis[4-(diethylamino)phenyl][1,1'-biphenyl]-4,4'-diamine (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 102279-04-9

CMF C52 H62 Cl2 N6



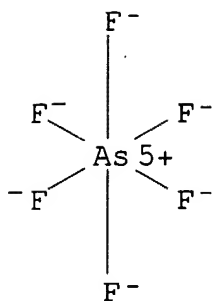
CM 2

CRN 17068-85-8

CMF As F6 . H

CCI CCS





IT 102279-05-0

(laser optical recording layer contg. polymethine coloring agent and)

L38 ANSWER 34 OF 38 HCA COPYRIGHT 2005 ACS on STN

96:77536 Aromatic amino charge transport layer in electrophotography.

Stolka, Milan; Yanus, John F.; Pai, Damodar M.; Renfer, Dale S.;

Pearson, James M. (Xerox Corp. , USA). U.S. US 4299897 A

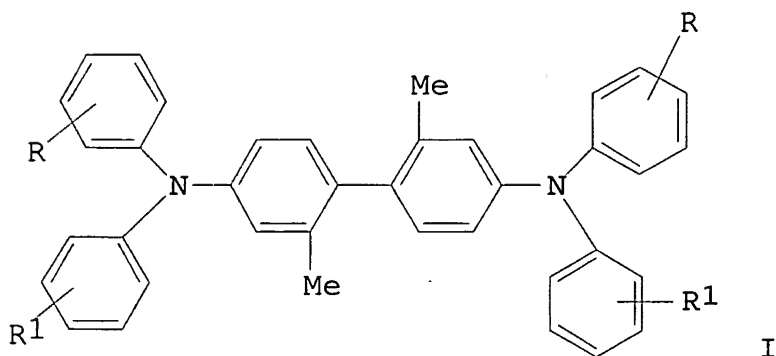
19811110, 14 pp. Cont. of U.S. Ser. No. 969,900, abandoned.

(English). CODEN: USXXAM. APPLICATION: US 1980-121768 19800215.

PRIORITY: US 1976-716404 19760823; US 1977-801116 19770527; US

1978-969900 19781215.

GI



AB Electrophotog. imaging member capable of remaining flexible while still retaining its elec. properties after extensive cycling and exposure to O, UV, elevated temp., and which has no bulk trapping of

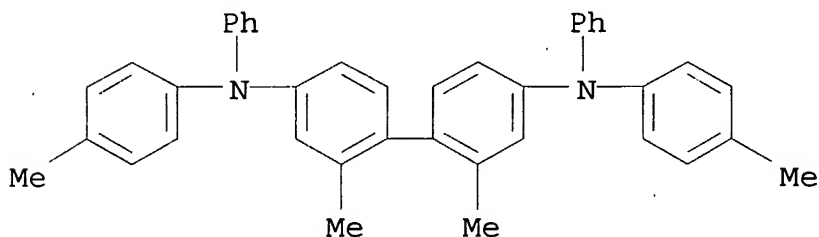
charge upon extensive cycling comprises a layer of a photoconductive material and a charge-transport layer of a polycarbonate resin contg. 10-75 wt.% of I (R,R1 = H, o-, m-, p-Me). Thus, aluminized Mylar support was coated with 1.mu. layer of vireous Se by vacuum deposition, overcoated with a mixt. contg. CH<sub>3</sub>Cl 135, N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[2,2'-dimethyl-1,1'-biphenyl]-4,4'-diamine 3.34, Lexon 145 g to give 22 .mu. dry layer (after 18 h drying at 40.degree.), heated to .apprx.125.degree. (to convert Se to cryst. trigonal form) for 16 h to give a plate which after being charged to a field of 60 V/.mu. and discharged at .lambda. = 4200 .ANG. at 2 .times. 10<sup>12</sup> photon/cm<sup>2</sup>s exhibited satisfactory discharge and was capable of forming visible images.

IT 80730-93-4

(electrophotog. charge-transport layer contg. polycarbonate resin in)

RN 80730-93-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)

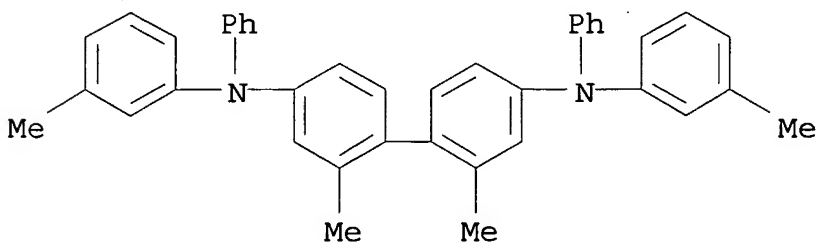


IT 65181-79-5 80730-94-5 80730-95-6  
80730-96-7 80730-97-8 80730-98-9  
80730-99-0 80731-00-6

(electrophotog. charged-transport layer contg. polycarbonate resin and)

RN 65181-79-5 HCA

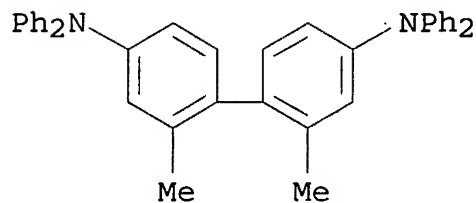
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



RN 80730-94-5 HCA

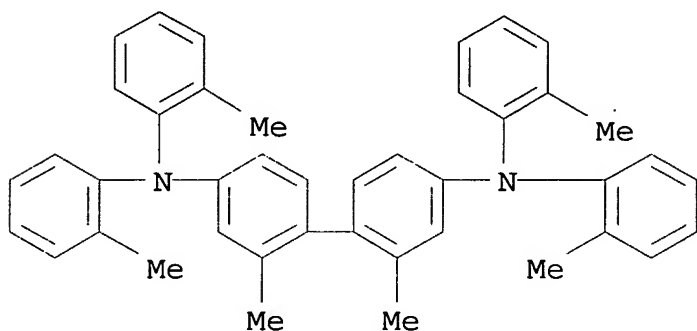
CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetraphenyl-

(9CI) (CA INDEX NAME)



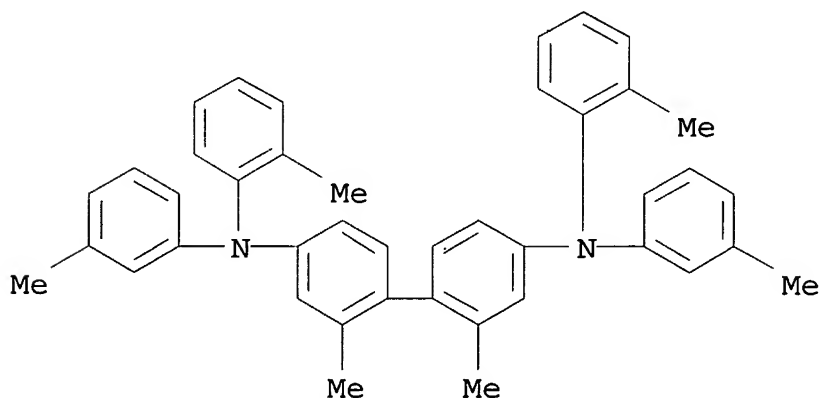
RN 80730-95-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(2-methylphenyl)- (9CI) (CA INDEX NAME)



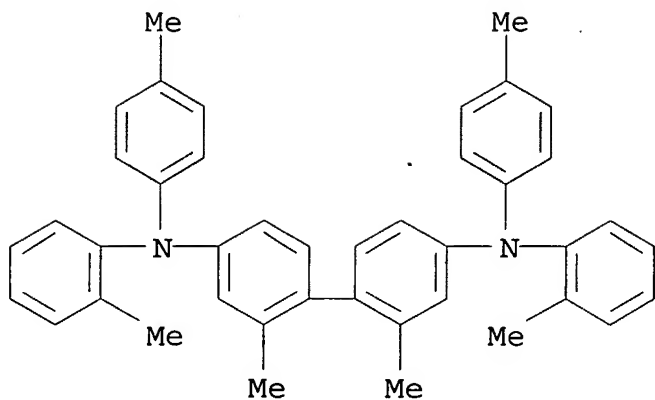
RN 80730-96-7 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(2-methylphenyl)-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



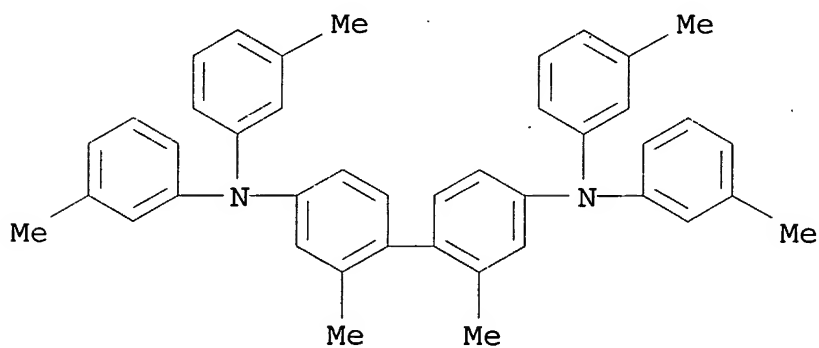
RN 80730-97-8 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(2-methylphenyl)-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



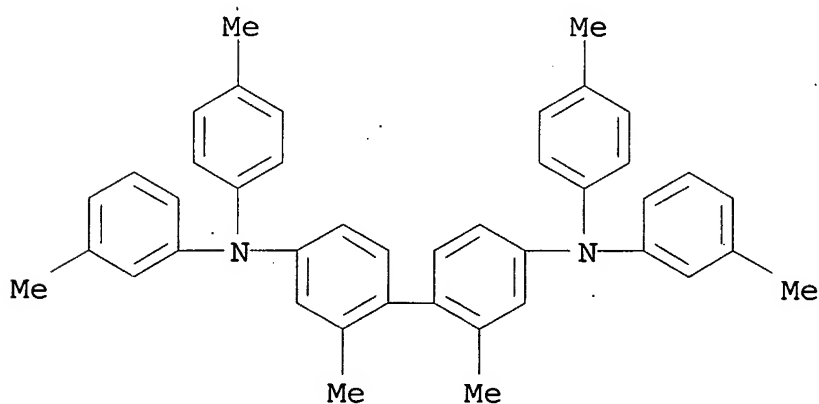
RN 80730-98-9 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



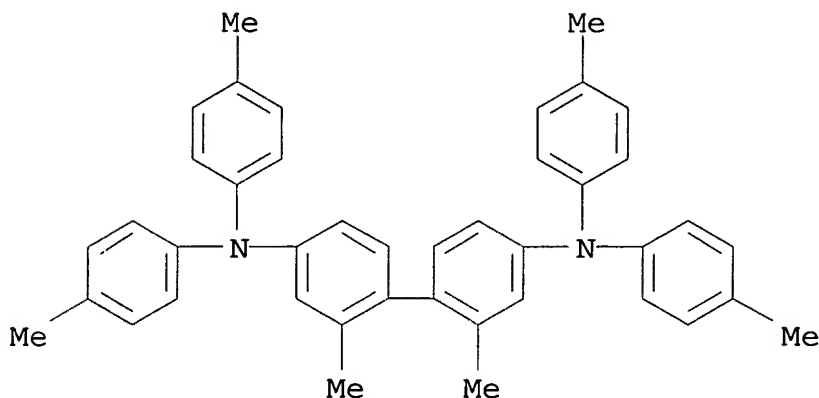
RN 80730-99-0 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 80731-00-6 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IT 80730-93-4

(electrophotog. charge-transport layer contg. polycarbonate resin in)

IT 65181-79-5 80730-94-5 80730-95-6

80730-96-7 80730-97-8 80730-98-9

80730-99-0 80731-00-6

(electrophotog. charged-transport layer contg. polycarbonate resin and)

L38 ANSWER 35 OF 38 HCA COPYRIGHT 2005 ACS on STN

89:120873 Composite layered photoreceptor. Horgan, Anthony M. (Xerox Corp., USA). U.S. US 4081274 19780328, 14 pp. (English). CODEN: USXXAM. APPLICATION: US 1976-737251 19761101.

AB A 3-layered electrophotog. photoreceptor which exhibits outstanding mech. properties and efficient hole and electron photogeneration and transport is comprised of a photoconductive layer sandwiched between a hole-transporting layer on 1 side and an electron-transporting layer on the other side. The photoconductive layer is capable of photogeneration and injection of charge carriers and comprised of vitreous Se or Se alloys with As and Te. The hole-transporting layer is comprised of 15-75 wt. % of N,N'-diphenyl-N,N'-bis(phenylmethyl)[1,1'-biphenyl]-4,4'-diamine (I) in a polycarbonate resin binder. Thus, an electrophotog. plate comprised of an aluminized Mylar support, a 22 .mu. thick hole-transporting layer consisting of I 50 and Lexan 145 50 wt. %, a 1 .mu. thick photoconductive amorphous Se layer, and a 3 .mu. thick electron-transporting layer consisting of 2,4,7-trinitro-9-fluorenone 1 and a polyester resin 1 g was charged to 55 V/.mu. and photodischarged at 4200 .ANG. at 2 .times. 1010 photons/cm2/s to exhibit satisfactory discharge properties to be useful in forming

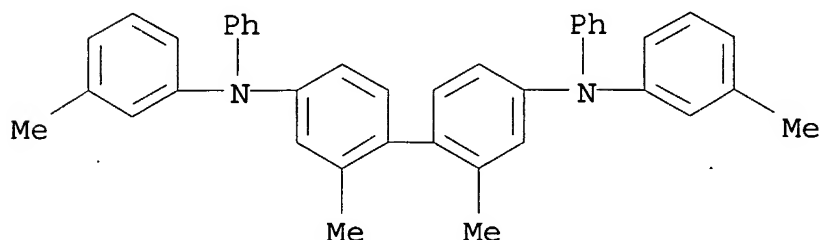
visible images.

IT 65181-79-5

(hole-transporting layers contg., for multilayered composite photoreceptors for electrophotog. plates)

RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IT 65181-79-5

(hole-transporting layers contg., for multilayered composite photoreceptors for electrophotog. plates)

L38 ANSWER 36 OF 38 HCA COPYRIGHT 2005 ACS on STN

89:51424 Composite layered photoreceptor. Horgan, Anthony M. (Xerox Corp., USA). U.S. US 4078925 19780314, 14 pp. (English). CODEN: USXXAM. APPLICATION: US 1976-737252 19761101.

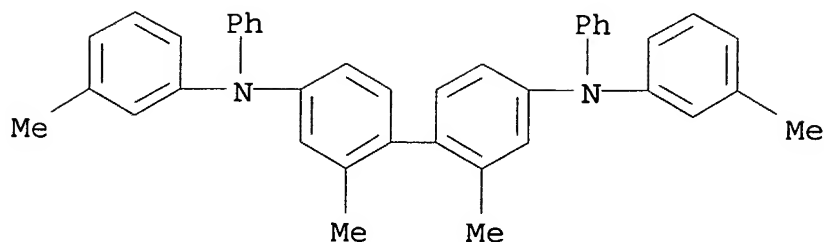
AB A 3-layered composite photoreceptor is described which consists of a photogenerator or photoconductive layer sandwiched between 2 elec. active layers, one being a pos. or hole transport layer and the other a neg. or electron transport layer. The pos. or hole transport layer contains an elec. inactive resinous material (polycarbonate resin) having dispersed therein .apprx.15 to .apprx.75% by wt. of bis(4-diethylamino-2-methylphenyl)phenylmethane or a similar type compd. Thus, an Al-coated Mylar support carrying a 22-.mu. thick layer of a photogenerated hole transport material consisting of bis(4-diethylamino-2-methylphenyl)phenylmethane 25 and Lexan 145 75 wt.% was overcoated with a 1-.mu. layer of amorphous Se and a 3-.mu. layer of 2,4,7-trinitro-9-fluorenone/polyester (1:1). The plate was then tested elec. and exhibited a satisfactory discharge at both fields. The plate was capable of forming visible images.

IT 65181-79-5

(electrophotog. photoconductive compns. contg. selenium, trinitrofluorenone, and)

RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IT 65181-79-5

(electrophotog. photoconductive compns. contg. selenium, trinitrofluorenone, and)

L38 ANSWER 37 OF 38 HCA COPYRIGHT 2005 ACS on STN

88:81833 Composite layered imaging member for electrophotography.

Horgan, Anthony M. (Xerox Corp., USA). U.S. US 4047949

19770913, 14 pp. (English). CODEN: USXXAM. APPLICATION:

US 1976-737292 19761101.

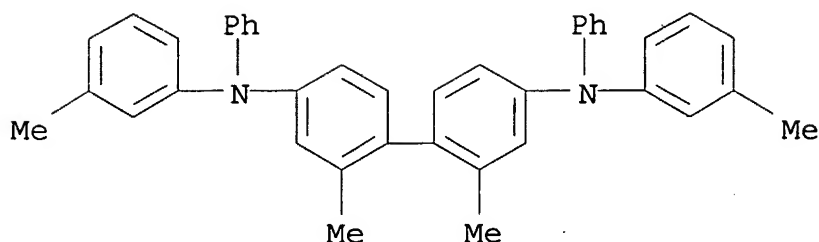
AB A composite layered imaging member for electrophotog. consists of a support carrying a 1st layer of elec. active charge-transport material, a photoconductive layer capable of generation and injection of charge carriers overlying this layer, and a 2nd layer of an elec. active charge-transport material in which 1 of the elec. active layers exhibits the ability of facile hole injection and transport and the other elec. active layer exhibits the capability of facile electron injection and transport. Esp. useful in supporting the injection of photogenerated holes are N,N'-diphenyl-N,N'-bis(phenylmethyl)-[1,1'-biphenyl]-4,4'-diamine (I), N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine, N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[2,2'-dimethyl-1,1'-biphenyl]-4,4'-diamine, and the like. Thus, an aluminized Mylar support was coated with a soln. contg. I 10, Lexan 145 10, and CH<sub>2</sub>Cl<sub>2</sub> 135 g to give a 22.μ thick layer, a 1.μ layer of Se was then vapor-deposited thereon, and the Se layer was then coated with a soln. contg. 2,4,7-trinitro-9-fluorenone 1, a polyester resin 1 g, and CHCl<sub>3</sub> 35 mL to give a 3.μ thick layer. The plate was then charged to 33 M/μ and discharged at a wavelength of 4200 Å., at 2 .times. 10<sup>12</sup> photons/cm<sup>2</sup> s. The plate exhibited a satisfactory discharge and was capable of use in forming visible images.

IT 65181-79-5

(electrophotog. photoreceptors with charge-transport layer, selenium layer, and layer of)

RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IT 65181-79-5

(electrophotog. photoreceptors with charge-transport layer, selenium layer, and layer of)

L38 ANSWER 38 OF 38 HCA COPYRIGHT 2005 ACS on STN

88:43748 Composite layered imaging member for electrophotography.

Horgan, Anthony M. (Xerox Corp., USA). U.S. US 4047948

19770913, 15 pp. (English). CODEN: USXXAM. APPLICATION:

US 1976-737448 19761101.

AB A 3-layered composite photoreceptor device is described which consists of a photoconductive layer sandwiched between 2 elec. active layers. The photoreceptor, which has outstanding mech. properties, is esp. useful in cyclic imaging. Thus, an aluminized Mylar support was coated with a soln. contg. Lexan 145 10, N,N'-diphenyl-N,N'-bis(phenylmethyl)[1,1'-biphenyl]-4,4'-diamine 10, and CH<sub>2</sub>Cl<sub>2</sub> 135 g to give a layer of 22.μ. dry thickness, a 1.μ. layer of vitreous Se was then vapor-deposited thereon, and the Se layer was then coated with a soln. contg. 2,4,7-trinitro-9-fluorenone 1, a polyester resin 1 g, and CHCl<sub>3</sub> 66 mL, which had been evapd. to 35 mL, to give a layer of 3.μ. dry thickness. The plate was then tested elec. by charging to 33V/μ. and discharging at 4200 .ANG. at 2 .times. 1010 photons/cm<sup>2</sup>/s. The plates exhibit satisfactory discharge at both fields and are capable of use in forming visible images.

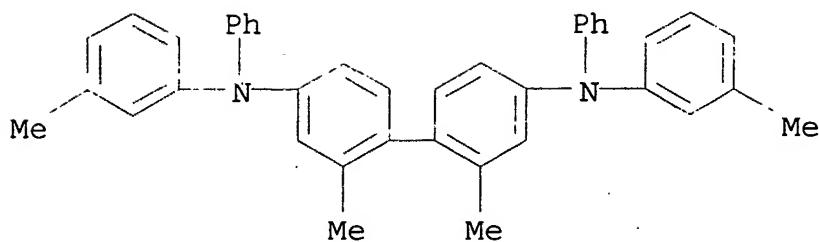
IT 65181-79-5

(electrophotog. photoreceptors contg. trinitrofluorenone, selenium, and)

RN 65181-79-5 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, 2,2'-dimethyl-N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)





IT 65181-79-5

(electrophotog. photoreceptors contg. trinitrofluorenone,  
selenium, and)